Florida WILDLIFE

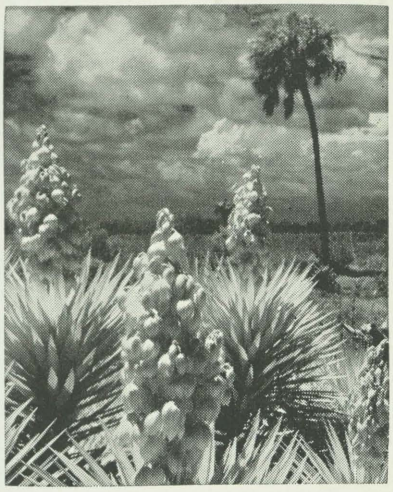
GET THOSE SUMMER BASS

WHEN FATE LAUGHS

FISH CONSERVATION FUNDAMENTALS

JULY, 1955 *The Florida Magazine for all Sportsmen* 25 CENTS

Florida Wildlife's Junior Wildlife PHOTO CONTEST



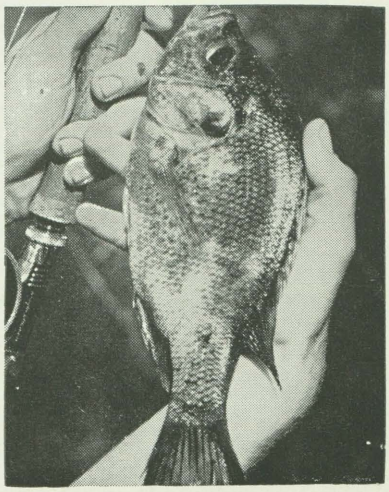
PLANTS

ANIMALS

RULES

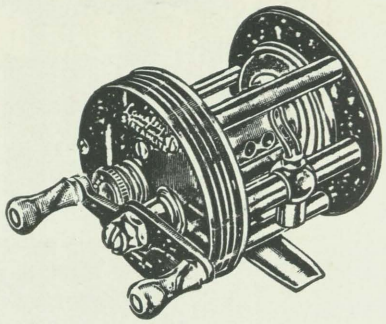
1. The Junior Wildlife Photo Contest ends at midnight September 15, 1955.
2. Contestants must be between the ages of 10 and 18 inclusive.
3. All photographs must be taken within the State of Florida.
4. All photos must be mailed first class mail to Florida Wildlife, Tallahassee, Florida, by midnight of September 15, 1955.
5. Contestants may submit as many photos as they desire.
6. Photos must be at least 4 inches by five inches in size and no larger than 11 inches by 14 inches.
7. The following information must be printed or typed on a piece of paper and pasted on the back of each photograph: (Do not write on photos.) (a) Name of camera used (b) type of film used (c) exposure used (d) location where picture was taken (e) your name, address, and age. This information must appear on the back of every photograph submitted.
8. All prize winning photographs become the property of Florida Wildlife.
9. No photographs will be returned unless self addressed, stamped envelope is enclosed with entry.

BIRDS

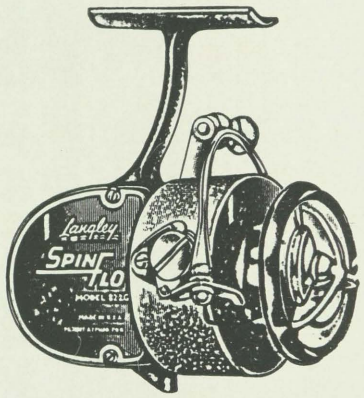


FISH

PRIZES



3 LANGLEY STREAMLITE REELS



3 LANGLEY SPINFLO REELS

PLYFLEX Casting Rods
SOUTH BEND Casting Reels
GLADDING Spinning Lines
GLADDING Casting Lines
MY BUDDY Tackle Box
AUBURN Fish Hook Assortments
REDHEAD Gun Case
LUCKY 7 Tackle Assortments
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VOL. 9, NO. 2

Florida WILDLIFE

JULY, 1955

★

Published monthly by the
FLORIDA GAME AND FRESH WATER FISH COMMISSION
Tallahassee, Florida

★

Dedicated to the
Conservation, Restoration, Protection of Our Game and Fish

★

BILL HANSEN, Editor — **MORRIE NAGGIAR, Associate Editor**

C. L. SATTERFIELD, Circulation — **M. L. NORWOOD, Editorial Assistant**

this issue:

In this issue of Florida Wildlife, a new feature, "Meet Your Commission," makes its initial appearance. Aimed at acquainting Florida Wildlife readers with the personnel who, collectively, make up the Florida Game and Fresh Water Fish Commission, the "Meet Your Commission" series is the work of the Regional Information and Education Officers. Each month one employee from each of the five wildlife management regions will be presented in this new department. Turn to page 46 for the first installment of this new series.

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MEET YOUR COMMISSION 46

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Florida Game and Fresh Water Fish Commission

ROSE TALLAHASSEE

★

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Wauchula

GORDON GRANGER
Lake City

B. BRACK CANTRELL
Okeechobee

DON SOUTHWELL
Ormond Beach

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Sirs:

That Plato Winder is in my estimation a real good writing man. Even I can understand what he's talking about.

Where is Ajax, Florida anyway? The map of Florida I have, copyright 1950, doesn't show Ajax.

JOEL DEESE
Jamestown, N. Y.

● *If you have a favorite fishing spot in Florida, that is Ajax. If you have a favorite storekeeper or camp operator, that is Plato Winder.*

* * *

Dear Editor:

A short while ago a friend of mine gave me some Florida Wildlife Magazines. Up until that time I never knew that there was such a magazine on the market. Needless to say, I liked them very much, especially the articles on Gunnery and Fishing by a Mr. McLaurin.

Therefore, I would appreciate it if you would forward the enclosed check for a one year subscription to the proper department.

T. H. KITTREDGE
Salem, New Hampshire

* * *

Dear Sirs:

I have renewed my subscription to Florida Wildlife, and I thought you might like to know why this magazine is my favorite. To start, I am very much interested in the State of Florida and expect to make it my home in the near future. As I have been a fisherman and hunter for years, the articles on conservation and fishing by Charles Schilling, Fishing Facts First Hand, by Edmund McLaurin and the other writers, who write of Florida I read with great interest. The March issue of Ajax, Florida furnished a good laugh for myself and several fishing friends to whom the issue was loaned. So you see the reason Florida Wildlife is my favorite because it covers what I wish to know about Florida, as a sportsman. I go along with the late Robert Page Lincoln who referred to Florida as "That Enchanted Peninsula."

C. E. FENDERSON
Springfield, Ohio

* * *

Dear Sirs:

Enclosed is two dollars for a renewal subscription for your *Florida Wildlife* magazine. I look forward to each issue of a most interesting magazine. Especially as I am very much interested in the bird and animal life of your wonderful state.

I was down this past February and had a most interesting time out with the famous Eagle bander, Charles Broley. Florida is one of the few states where our American Eagle is still to be seen in fair numbers. Mr. Broley has banded over 1200 eaglets in Florida.

I hope to see an article about the Bald Eagle in your *Florida Wildlife* in some future issue. I feel right at home in the sunshine state; always put in a good word for Florida.

HARRY WALKER
Union, New Jersey

Dear Editor:

Thank you for the second fishing citation issued for the 9 pound 1 ounce bass I caught in July. The enclosed photo shows this bass along with a 7¼ pounder taken the same day. I do all my fishing with a fly rod and lunkers like these can really supply angling thrills.

M/SGT. H .W. MESERVE, USMC
Jacksonville, Florida

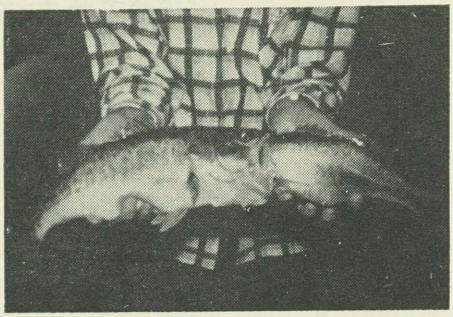
* * *

Dear Sir:

My brother Henry McRea of Thomasville, Georgia gave me a subscription to *Florida Wildlife* which I am enjoying and passing on to other fishermen.

Another brother in Atlanta and myself "call our shots" when we go fishing together. We predict the weight of the next bass to be caught and must be within 3 ounces or thrown back into the lake. Sometimes we sharpen the margin to one ounce just to make it interesting and the winner at the end of the day gets a box of Hava-Tampa cigars.

TOM McREA
Philadelphia, Pa.



Dear Sir:

We thought you might find this picture interesting enough to print for your readers. The smaller bass is stuck firmly in the mouth of the larger one. They were near helpless when Miss Orville Taylor of Tampa lifted them from the water when she noticed the disturbance they were making.

Stan Lemoind of Iowa Falls, Iowa took the picture when he was staying at the Picciola Camp in February.

MRS. J. H. MENIFEE
Leesburg, Florida

* * *

Gentlemen:

Enclosed is check for renewal of *Florida Wildlife* magazine. We enjoy reading your magazine and have gotten so much information from the articles in it.

We spend about six months of each year in Florida. While here we live in Tavares Trailer Court located on the Dora Canal. This is considered to be one of the most beautiful miles of waterway in the country. It is a natural haven for all kinds of wildlife and we never tire of taking a slow ride in our boat. Since the weather is warm we see turtles, snakes, alligators, and many varieties of beautiful water birds.

It makes us heartsick to see where cypress knees have been newly cut off almost every day. We wonder why people cannot abide by the lawful speed limit of four miles per hour. Several weeks ago we were going slowly when dozens of boats passed between us and one going the opposite direction, hit our boat and kept right on. It did no damage to us but very easily could have wrecked his plywood boat. Besides being a safety hazard, this reckless speeding frightens away the wildlife which many people like to see.

DAVID SPRINGER
Vermilion, Ohio

* * *

Dear Sirs:

I really appreciate the historic features of your fine magazine. Florida and Louisiana seem to be the last stand for several species of our once abundant wildlife threatened with extinction.

These states could truly be havens if the majority of mankind gave a little more thought to nature in general. Is there any

progress being made to preserve the Key Deer? The sandhill crane once flew over central Oklahoma in great numbers but I believe it's almost 30 years since I heard of one around here.

DAVID EDWARDS
Calvin, Oklahoma

● *A recent survey indicates that the Key Deer is making some progress in the long, hard road to recovery. The species is protected by both state and federal laws.*

Gentlemen:

I am sending a picture of a limit string of some nice largemouth bass I caught in Lake Dora. These were taken last summer when I was still living at Mt. Dora and should prove they have some real good fishing there too. The largest one weighed 9¾ pounds.

I believe I established some sort of record there as I caught my limit of bass on 28 consecutive fishing days and these facts are recorded at Finzells Fishing Camp.

J. E. SCHOMBURG
Miami, Florida

* * *

Dear Editor:

Enclosed is my check for my renewal to *Florida Wildlife*. I really enjoy your magazine and every issue is like a trip to Florida.

I especially like your interest in conservation. If every state was as interested in conservation and the enjoyment of the sportsmen as Florida is, it would be a grand thing. Keep up the good work.

RAY FAULKNER
Chattanooga, Tennessee

* * *

Dear Sir:

I am a long time subscriber and reader of Florida Wildlife and I would like to express my appreciation for receiving such a fine magazine. Your publication is both entertaining and educational besides doing great work in conservation.

There are many sportsman's magazines but in my opinion FW surpasses them all. Both young and old alike read it from cover to cover.

The articles by Ross Allen are one of the high points of the magazine. I hope Florida Wildlife will continue its high standards, low prices and remain Florida's top sports magazine.

Fred Grose
Jacksonville, Fla.

FLORIDA Birdlife

THE FLAMINGO

Phoenicopterus ruber

So often has the flamingo been utilized as the motif for decorative pieces and advertising, perhaps with the purpose of accenting the semi-tropical aspect of much of Florida, that the species has assumed the status of unofficial state bird. Actually, however, the flamingo is today hardly more than an occasional visitor to the state.

In Audubon's time, the flamingo was found in fair abundance in extreme southern Florida although even at that early date it was already becoming wary and less numerous as the result of relentless persecution.

At the present time the range of the flamingo includes the Bahamas, Cuba, and Yucatan to Guinea and Brazil.

The flamingo is a bird of the broad, open mud flats in remote sections of the tropical coasts where there is a minimum of human intrusion. Any degree of human activity soon drives the species to seek more isolated surroundings.

Dr. Frank M. Chapman who, early in the present century spent a great deal of time and effort in locating and studying in detail a breeding colony of flamingos in the Bahamas, had this to say regarding the species:

"There are larger birds than the flamingo, and birds with more brilliant plumage but no other large bird is so brightly colored and no other brightly colored bird is so large. In brief, size and beauty of plume united, reach their maximum of development in this remarkable bird, while the open nature of its haunts and its gregariousness seem specially designed to display its marked characteristics of form and color to the most striking advantage."

The nest of the flamingo is unusual in appearance, being a truncated cone ranging from a few inches to over a foot in height. The diameter at the base measures from 18 to 23 inches and at the top from 12 to 14 inches. Marl or mud scooped from the immediate vicinity is the usual material used in nest construction although, when available, grasses and small twigs may be intermixed. The bird, far from being a solitary nester, forms great nesting colonies some of which have been estimated to contain as many as 2000 nests. When the breeding grounds are not disturbed, the birds usually return to the same vicinity each year.

Ordinarily a single egg comprises each year's production by each female, however, two or even three eggs have been found in a single nest.

Both members of the pair take part in the incubation, a duty which requires approximately a month. A few hours after hatching, the chicks are able to swim and to run readily. Within three or four days they leave the nest.

The young, at hatching, have a straight bill which is wholly unlike that of the adult bird and it is not until the chick is about two weeks of age that signs of the bent "Roman nose" bill of the adult appear. During the early days of life the young are fed by regurgitation but within a comparatively short time they take

(Continued on Page 47)

JUNIOR CONSERVATIONIST

By DENVER STE. CLAIRE

HI GANG! By the time that you read this, many of you will have already been at Camp and will have been able to take advantage of the tremendous progress which we have made this Spring. One of the big surprises this year for our Fourth Annual Encampment will be a sand beach. For those of you who were at Camp last year, you will remember the position of our dock jutting out into Lake Eaton. Now, if you close your eyes and try to picture yourself on the dock looking toward the shore, you will find 800 feet of sand beach. And—what is even better, the muck laying at the bottom of the Lake in our swimming area has been covered with sand. All of this for your greater enjoyment. Add to this a sizeable swimming raft, 16 x 16 feet, floating off the shore about 50 feet from the end of the dock, you have a picture of really wonderful swimming facilities. The raft will also have constructed on its floor a Life Guard Chair which will be used by our Water Safety Counselors.

The size of the Mess Hall this year will really surprise you with its 4800 square feet to be used for cooking and dining. The kitchen area measures 25 x 48 feet and the dining area will occupy the rest of the space. It has a 4 inch poured cement floor with 8 x 16 inch poured foundations. All these, of course, add to the stability and strength of the construction. 20 large windows will be used in the Mess Hall to provide plenty of light.

Of course, you must know we have increased the size of our cabins from 16 x 16 feet to 16 x 20 feet. Each cabin will have 6 large windows to give proper ventilation and light. There will be five double bunks in each cabin providing sleeping quarters for 10 campers. All of these cabins are constructed of concrete blocks, same as the Mess Hall. Slanted sled roofs will be used to allow more light and better ventilation.

* * *

Following are the TOP CLUBS for the month of APRIL.

1. Bartow Junior Conservation Club
2. Allapattah Optimist Junior Conservation Club of Miami
3. Pahokee Junior Wildlife Club
4. Lakeland Junior Wildlife Club
5. Perry Wildlife Club of the Foley Junior High School
6. St. Johns Junior Conservation Club of DeLand
7. Leesburg Junior Conservation Club
8. Dean Mather Wildlife Club of Ocala
9. Wildwood Junior Conservation Club

   St. Petersburg Junior Rod and Gun Club

* * *

The Board of Directors of the Junior Conservation Club League held their third quarterly meeting on Saturday, March 26, at the Marine Laboratories of the University of Miami at Coral Gables. Attending the meeting were Cathlyn McClain, Charline Pledger, Walter Krueger, Johnny Coleman, and Lynn Ward of the Board of Directors. Members of the Information and Education Staff included Denver Ste. Claire, Bob Revels, Frank Nowak and Ed. Timmons. Guests included Mr. E. B. Jones, former director of the Game and Fresh Water Fish Commission, Betty Cooper of the Bay County Girls Conservation Club and Phil Alexander of the Allapattah Optimist Junior Conservation Club. Also, Wildlife Officer Mr. Ed. Richey.

Members of the Dean Mather Club who have been alert in helping fight fires in the Ocala National Forest area.

The most important business of the meeting concerned the graduated rank system which is being devised for Junior Conservation Club members throughout the State. It was motioned and approved that the following rank system be used: *Pledge, Ranger Warden, Forester and Conservationist.* Each rank will be earned by use of Merit Point Projects. Each Junior Conservation Club member will be required to earn a certain number of points within a prescribed period of time in order to be eligible for each rank. These requirements will be worked out by the Board of Directors at future meetings.

The Board members approved the designs for merit badges to be awarded at the Camp this summer. These patches will be awarded upon the basis of passing a written examination and come under three headings: Forestry, Game and Fish. Later other patches will be awarded upon the same basis for further specialized fields of study.

Other business of the meeting was concerned with the program for Conference Week at Camp.

* * *

AROUND THE STATE WITH CONSERVATIONISTS

On May 23, Mr. A. D. Aldrich, director of the Game and Fresh Water Fish Commission, Earle Frye, assistant director, James Bickerstaff, regional manager of the northwest area, Mr. David Swindell, regional manager of the central area, and Mr. James Reed, information and education officer of the central area along with your reporter surveyed the camp and its construction. All of you attending camp this year will have an opportunity to meet Mr. Aldrich, our new director, who is very interested in your program. Mr. Earle Frye, assistant director, will also be on hand each week to talk to you about conservation.

Mr. Robert Dahne, state coordinator of the Information and Education Staff, paid us a similar visit on May 19. You will also have an opportunity to meet Mr. Dahne this year.

The first two delegates to send in their names for Conference Week were Walter Sklark and John Barret of the Archbishop Curley High School Conservation Club in Miami. Other delegates at this time include Mike Davis, Gary White and Tom

(Continued on Page 36)

THE PURPLE MARTIN

By L. M. HARDY

THE PURPLE MARTIN is an interesting and valuable insectivorous bird that may be easily encouraged to establish a permanent summer residence near one's home. Martins enjoy living near people, and like to live with other martins. The happiest arrangement for them is a spacious, multiroom box for twenty families or so, a whole colony of them, in someone's yard, placed safely away from marauders on a pole about fifteen feet from the ground, and not too close to trees or other tall dense-growing vegetation. They come back year after year to the same apartment, on almost the same day, and relish having their human neighbors an audience to their coming and going. A man saw his little boy watching, and went out beside him. "What are the Martins doing now?" he asked. Junior saw one flying with a big leaf. "I think," he said, "They're bringing in the furniture." Many people have seats placed where they can follow the lives of their tenant martins and the bringing up of their families. A vastness of space and a wealth of novelty can be added to one's small urban back yard if it is shared by a colony of these busy little dwellers staging a continuous spectacle of aerial gyrations, accompanied by pleasing communicative chirrups and liquid song. The martin is semidomestic in its nesting habits, and its presence near man is mainly dependent on bird houses or gourds put up for its use.

Martin houses should have compartments 6x6x6 inches or more, and compartments completely separated from each other by partitions. Each compartment must have its own door, which, if round, should measure 2¼ inches in diameter. Bigger doors are unnecessary and have been known to let in larger marauding birds that might otherwise have been easily guarded against. Provision for ventilation and drainage holes are very important. Martin houses sometimes become unbearably hot under the summer sun and all precautions to make them roomy, cooler and more comfortable will be rewarded in giving vigorous successful broods of birds. The use of light colored paint in preserving the house aids in making it cooler. All martins are plagued with poultry mites and these can be controlled by putting a pinch of dusting sulphur on the floor of each compartment in the early spring just before the birds arrive. Too much sulphur would become offensive to the martins; use only a small amount, about the size of a pea, in each. Upon this will be placed the nesting litter and the four to five milk white eggs. The warmth from the body of the sitting mother will aid in volatilizing the sulphur to produce a vapor that will be lethal only to the mites. Martins also like gourds, but gourds last only two years under normal weathering, whereas well-built bird houses are less bother, and last twenty years or more.

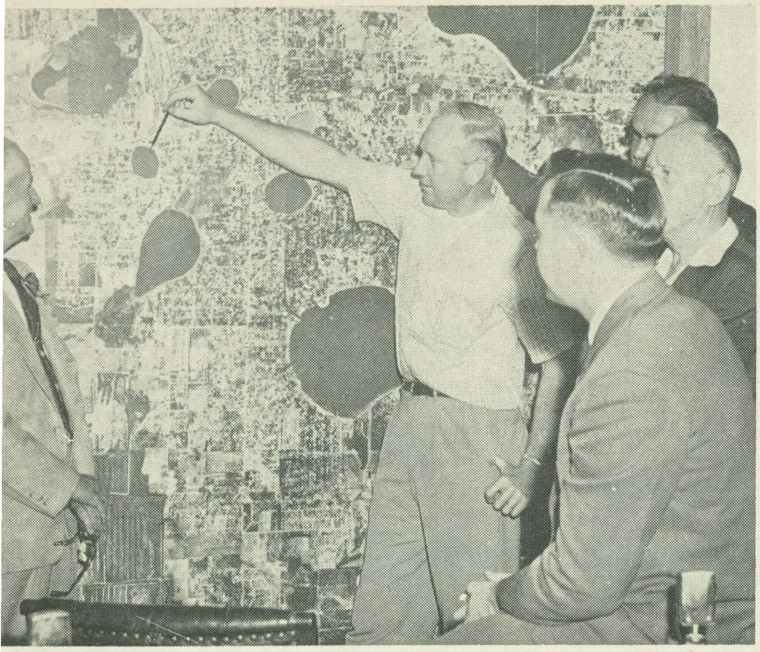
Gourds have long been favorite nesting quarters for martins, and their use dates back to pre-whitemen days when the American Indian erected them for the birds' use about their villages. The practice was handed down to the early white settlers and has continued to the present day. The usual custom was to hang a dozen or more gourds from crossarms on a high pole with each gourd providing a nest for one pair of birds. Gourds offer some advantages over a bird house in that they are cooler and less infested by mites than are the more conventional bird houses. If you wish to grow your own gourds, you will want to plant them in a rich, well-drained soil in the early spring. It takes about five months to maturity. In the event

(Continued on Page 50)

SELECTIVE

By MELVIN T. HUISH

PHOTOS BY PETE NOVAK



E. T. Heinen, Manager of the G&FWFC's Southern Region, points to Lake Beulah as he discusses the project with Lakeland city officials.

AN EXPERIMENT which shows promise of developing into a valuable technique for the control of rough fish was demonstrated last spring on Lake Beulah in Polk County. Through the cooperation of the City Commission of Lakeland, permission was granted to the Game and Fresh Water Fish Commission to conduct a selective poisoning experiment on the eighteen acre lake, located south of the Route 92 underpass on the west side of town.

Lake Beulah may be considered typical of many small Florida lakes which, after years of good to excellent fishing, suffered a drastic decline in game fish production. As in many similar instances, this condition was attributed to a fish population that was composed predominately of "rough" fish, in this particular case, gizzard shad.

Although the gizzard shad is a non-predacious species, the competition for food, especially with the young of bass, bluegills, and other desirable game fish, makes the elimination or drastic reduction of the shad population an important first step in the rehabilitation of the productive capacity of such waters.

For some years, rotenone, a derivative of the root of a tropical shrub, *Lonchocarpus,* has been employed as a fish poison. The outstanding advantage of rotenone is concerned with the fact that at dosages which are toxic to fish there is very little detrimental affect on fish food organisms.

When used in the restoration of comparatively small bodies of water, it has been the practice to remove, as nearly as possible, all fishes and, after a sufficient lapse of time to render the treated waters non-toxic, to restock with the desired species.

During the course of these operations, it was noted that certain species were more susceptible to rotenone than were others. Gizzard shad, especially, appeared to be in this category.

In order to control the degree of rotenone concentration so that the threshold of tolerance of bass and other game fish would not be exceeded, careful computation of the total volume of water in the lake was necessary. Using an aerial photograph and planimeter readings, the lake was determined to be 18 acres in extent. More than one hundred soundings were made in order to determine the average depth of fifteen feet. The deepest place sounded was twenty-eight feet. Much of the central portion of the lake is twenty feet or more in depth and at least three-fourths of the lake is ten or more feet deep. Although there was little evidence of a heavy plankton bloom at the time the experiment was conducted, Lake Beulah is considered to be a highly fertile body of water.

Five gallons of emulsifiable rotenone was applied to the lake. The poison, which incidentally is non-toxic to man, was mixed with water and distributed in two phases. Two and one-half quarts were placed in the water deeper than twenty feet and seventeen and one-half quarts were placed in the water between ten and twenty feet in depth. The applications were made by the use of a drum connected to a pipe with outlet holes at the proper depths and mounted on an outboard motor boat. The boat was moved slowly back and forth over the lake while the mixture was fed through the pipe. The concentration of poison used amounted to six hundredths of one part per million of water in the lake. Even before the distribution of the poison was complete, some shad were dead or dying. In previous experiments as much as one-tenth of one part per million was applied before obtaining satisfactory kills of shad.

Within a few minutes following completion of the applications, many gizzard shad were seen dead and dying all over the surface of the lake as well as around the shore. At this time, thirty-seven small bluegills were also found in distress. It is believed that the few game fish which were killed must have been caught in a very high concentration of the mixture as it was being applied. The evidence in support of this statement is that fewer and fewer bluegills were affected whereas increasing numbers of shad were in evidence. This strongly suggests that as the material became dispersed, the game fish were affected less. Negligible numbers of other species were affected.

As a result of the poisoning operation, 5,554 pounds (calculated) of shad were killed. Of these, 3,628 pounds were picked up and disposed of over a period of eleven days following the application of rotenone. Many of the shad picked up were counted and weighed, either individually or in lots, to serve as a basis for calculating the total kill.

It is of interest to note that the largest quantities of shad which were collected surfaced on the fifth day following the poisoning. The cold weather and the depth of the lake probably accounted for this.

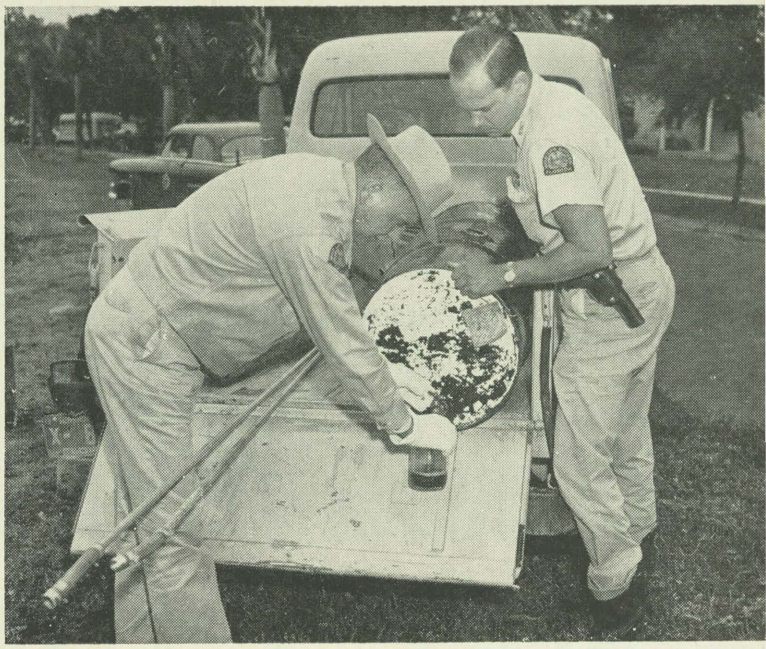
Many of the shad, it was discovered, buried them-

selves in the mud on the lake bottom and were not recovered. For this reason, an adjustment of the figures was necessary in order to calculate the total kill. This adjustment is represented by a thirty per cent addition to the kill. Actually, experience with fish poisoning indicates the non-recovery rate was much greater than thirty percent, in some cases having been found to be as high as eighty-six percent.

The figures of pounds of shad killed may not seem especially large when compared with the total poundages removed by haul seine from some of the other bodies of water in Lakeland. When the data are considered from the standpoint of pounds removed per acre of water (308.6 lbs. per acre) the figure is of interest. It represents a kill of considerably more than twice the poundages removed by haul seines following netting operations extending over a period of a year or more in some of the larger lakes. Other advantages of the selective poisoning method are that it can be used in lakes which are too deep to be seined, as was Lake Beulah, and that it will kill small shad which would escape through the meshes of a seine. It is also inexpensive enough to make it financially possible to place a larger number of lakes under management for the reduction of shad.

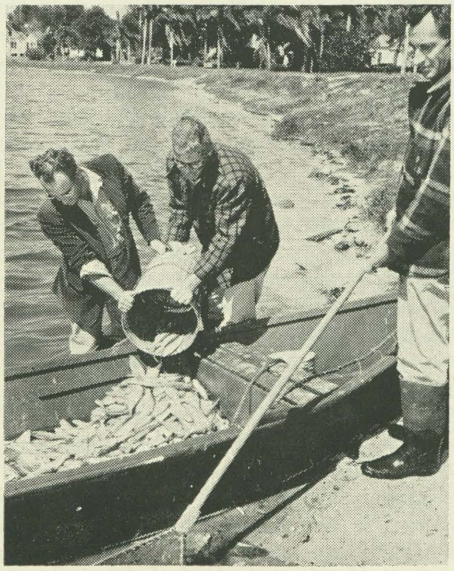
The attention attracted by the poisoning operation seemed to focus the interest of anglers on Lake Beulah and within a few days of the application of the rotenone, catches of bluegills and shellcrackers were reported from these waters. The available evidence seems to indicate that the operation had not disturbed the game fish sufficiently to prevent them from feeding and from biting the offerings of the anglers.

Experiments on selective poisoning are continuing. Although it is still too early to predict the success of the method under the varied conditions encountered in various parts of the state, the technique shows signs of developing into one of our most valuable tools for the proper management of the vastly important fresh water fishery resources of Florida. END.

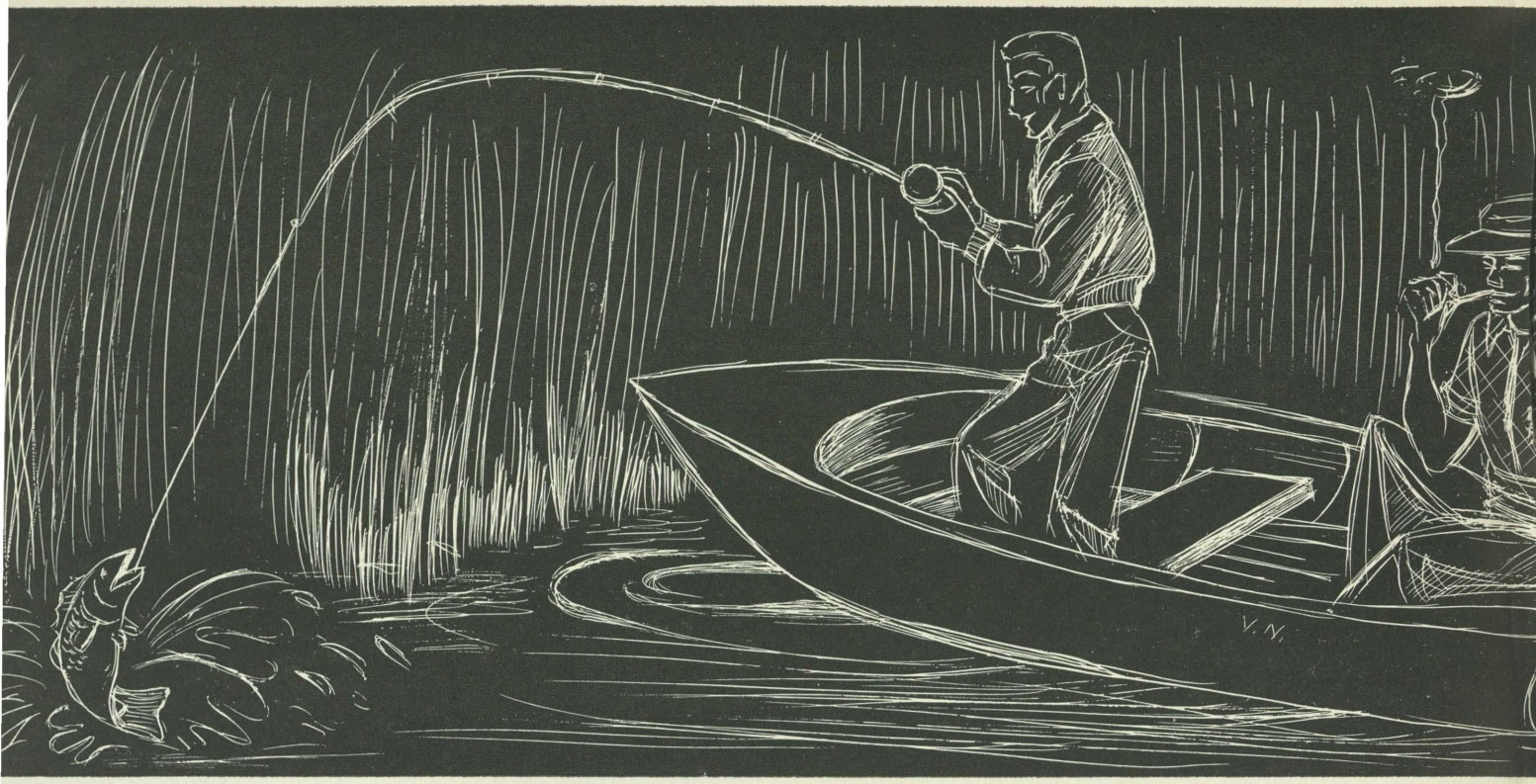


Guy Garrett, left, superintendent of the state fish hatchery at Winter Haven, and Wildlife Officer Allan Neal of Lake Wales, measure out fish poison used in the operation.

Fisheries Technician Harold Moody and Mel Huish, Assistant Chief of the Fish Management Division, distribute poison on Lake Beulah.



George Horrel and Mel Huish of the Game and Fresh Water Fish Commission, dump a barrel of gizzard shad killed by treatment of lake's waters.



GET THOSE SUMMER

EVEN THOUGH Florida is rightly acclaimed the bass capital of the world, there are going to be a lot of fishermen absorbing a lot of disappointment during the hot days of the Florida summer.

Though I now have sand in my shoes, I still have enough of that thick Yankee blood left in my veins to remember my first encounter with the champ of all fresh water fish—the Florida largemouth.

The weather was hot that summer with the sort of South Florida heat which turns your blood into the consistency of about 10-weight oil. I need say no more to those who have been in the southern inland part of the state during July, August, and September, than that the weather was normal for that time of year.

I had fished all the better known spots in that area, the Caloosahatchee River between the Moore Haven and Ortona locks, and along the western shores of Lake Okeechobee, from Clewiston to the mouth of the Kissimmee River.

Two factors led me to decide on saving money by staying at a Moore Haven motel instead of at one of the numerous fishing camps located near the great lake. First of all, I was no novice with a casting rod and knew all there was to know about largemouth bass (I thought). I had fished the country over, from the Lake-of-the-Woods in Minnesota to Lake Mead above Hoover Dam. Secondly, wasn't Florida noted for bass which practically fought for the privilege of furnishing the main course on the supper table?

It seemed logical, then, to confine my questions about fishing conditions to the scraps of information obtainable in and around Maude's Restaurant—this consisting of a general indication of local fishing spots.

I've never been one to catch a bag limit merely for the sake of taking the fish from the water, and so, when I learned that the daily limit was 8, I confined myself to catching only what I could myself eat.

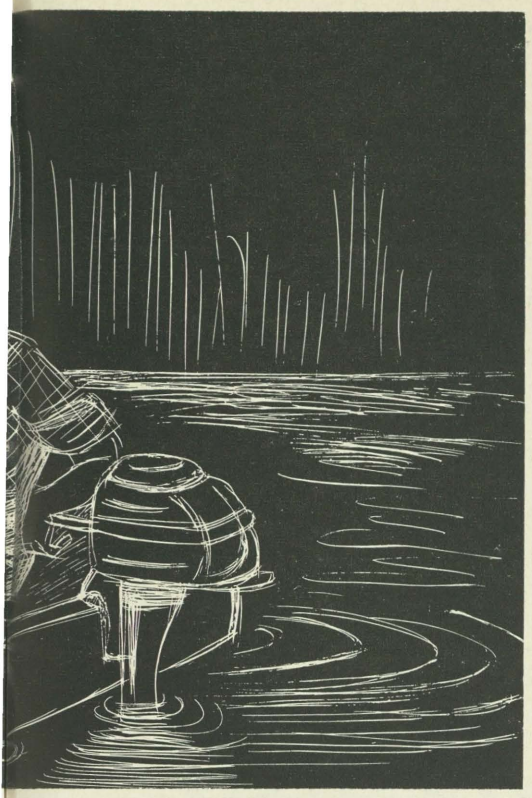
However, though I didn't have too much difficulty catching all I wanted, still I sensed that bass fishing in this locale was not what I had been led to believe it would be by the deluge of chamber of commerce literature which preceded my first trip to the Sunshine State. I confided in a local resident with whom I had struck up an acquaintanceship. I'll just call him Charlie because I can't recall his last name.

He listened sympathetically while I declaimed my suspicions, then asked me if I had been out at night. *Naturally* I hadn't! The only night fishing I had ever done was during my youth, at Indian Lake, Ohio. My brother and I fished for crappies by hanging a kerosene lantern under a bridge, on nights when the water was mirror-smooth, so that it just cleared the water. This attracted numerous bugs—and numerous crappies—so it didn't take but a few minutes to catch all we wanted with dry flies and a cane pole.

Of course, I had heard various theories about fishing at night because the bass stay in the deeper, cooler water during the hot part of the day, but I had also become adept at numerous techniques for arousing their interest at midday. Besides, the waters further north do not become so hot under the sun that a bass is too reluctant to venture out after a tempting morsel.

But talking to Charlie brought home to me once again the truism that a fisherman can learn a new wrinkle every day if he's willing to listen.

His explanation centered around the fact that all fishing problems arise out of the relation between temperature and fish. They're cold-blooded, so naturally the temperature of their bodies varies with that of the water. Here in Florida that temperature ranges roughly from the twenties to the high eighties. As a result his bodily functions are, to a great degree, de-



BASS

By JULIUS STURM

pendent upon the temperature. Particularly is this true of his digestive process which slows down when the temperature tends toward either extreme.

Now, local conditions have a lot to do with this general rule, and in a square mile you'll find many different sets of conditions which produce widely differing habits. It's known that some bass will feed during extremely cold weather when most of the others become loggy and stop eating entirely, living off their stored fat. And bass have actually been known to hibernate!

Fish tend to take on the same body temperature as the surrounding water, so naturally they try to find water which is close to their liking. The range of favorable temperatures varies widely, so common sense must be brought into play when considering these factors. In hot weather they go deeper where the water is cooler, and in shallow water which has been under a hot sun all day, they'll feed after dark. And if they've found food plentiful, they are less inclined to feed.

Some of the things that Charlie pointed out to me, I had known vaguely, but they seemed to make a good deal of sense coming from this man who had been born and raised in an area where bass are as familiar as a pot of swamp cabbage.

Logical as it now seemed, I readily accepted Charlie's invitation for a night fishing jaunt, as I sensed that I was being privileged to have the vagaries of the renowned Florida bass opened to my eyes.

His boat was equipped with an outboard motor, and we set out from just above the Moore Haven lock late in the afternoon. By the time we had made our way for several miles along the shore, in a gentle ground swell, the sun was setting over the huge dike which blocked our view of the land along this side of Lake Okeechobee.

The shoreline in this area consisted of a rather undisturbed, natural stand of weed beds, untrammelled by swimmers and boatsmen.

"Now, the trick of the whole thing," Charlie was saying, and it brought me back from the beauty of this primitive setting to the business at hand, "if you could call it a trick, is just find the right spot."

"Surely," I suggested in surprise, "with so many miles of these weeds, finding a spot isn't difficult!"

He seemed disgusted with my naivete. "Oh—you can drop a hook in the water *anywhere* in Florida and catch just any fish!" he said testily. "But if you want to take the big ones you have to find out where they are."

Charlie had stopped the motor, but it was hard to tell just how far we were from the shore, even in the light of a king-sized moon coming up from the east. The weeds extend so far out into the water that there's no clear line of demarcation.

"There's a sand bar in there about thirty feet—near the mouth of that little creek." Charlie was pointing toward the shore, and I could now make out a break in the weeds where a creek apparently emptied into the lake.

These were ideal largemouth conditions, I noted. Weeded shoreline, and lots of rooted vegetation well below the surface of the water. I'd have to take Charlie's word for the existence of the sand bar because I couldn't see it. But I vaguely remembered having heard somewhere that largemouths have an absolute passion for foraging in shallow water after dark.

I hooked one of my surface-disturber-type plugs to my leader and threw it out into the edge of the weed bed close to the mouth of the stream. Charlie seemed content to let me handle this end of the expedition, and sat puffing his pipe contentedly as I dropped two more casts into virtually the same spot, and retrieved them slowly, but without a sign of a strike.

The fourth cast brought results. Near the spot where Charlie had indicated the bar's location, a patch of weeds grew out of the water. I got a strike there and reeled in what proved to be a two-pound largemouth. In the next ten minutes I got two more, roughly the same size.

"Have yuh got one a' them poppin' plugs?" Charlie asked, "or one with a propeller on the head?"

"I have two or three different kinds," I told him.

"Why not try your popper?"

I thought for a moment. I've been sold on these surface-disturbing lures for many years, and have always had excellent results with them in early morning or late evening fishing. I decided against the change, since the plug I was already using had produced three fine bass in the last ten minutes. I told him so.

He seemed disgusted. "All right," he drawled and looked up at some birds winging their way overhead. The tone of his voice seemed to indicate that I didn't know as much about bass fishing as I had suggested during our earlier conversations.

I turned back toward the shore and cast the plug into the same general area where my previous casts had landed. As I slowed the reel with my thumb, I heard the plug hit the weeds with a papery rustle and drop into the water with an almost imperceptible "ping."

I jiggled the rod tip four or five times, then reeled in a half dozen winds and let the plug settle on the surface, then repeated the process. Near the same weed bed on the sand bar where I had taken my previous prizes, I let the plug rest a moment, then gave it a stronger jerk than before and reeled in a few turns very quickly. Even from thirty feet away I could hear the splash as it broke the surface of the water, but the splash which followed made the first one seem insignificant.

It was a strike—and a good one! Whatever had hit the plug had done so with the ferocity of a blue marlin in the Gulf Stream!

Quickly I set the hooks as my quarry headed for the weed bed. The rod tip bent dangerously, so I let him take some line before I brought him up again with the pressure of my thumb on the spinning reel, and it took the assistance of my hand on the knob to stop the rush of line out through the guides.

I had a good one on the line! There was no mistaking that!

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SMALL POND MANAGEMENT

By F. G. BANKS

THE PAST TWO decades have witnessed tremendous advances in the various fields of biology, especially in conservation. Research and management have made great strides in the fields of fisheries, wildlife, forestry, and soil conservation. These activities are so related that the improvement in one field usually helps to improve conditions in another. The relationship between watershed and run-off, soil erosion and floods, impoundments and regulated stream flow, have a marked bearing on the fishery resources of a stream. Farming practices limit the kinds and numbers of wildlife which depend upon certain conditions for their well being, and also affect the numbers and kinds of fish in the streams and farm ponds.

Fish ponds have gained such popularity in certain sections of the country and are so tied in with other fish and game problems that the various state game and fish organizations have undertaken to provide some technical assistance with the planning and management of these bodies of water. These ponds are either artificially constructed or may be natural depressions in the earth. In some sections of Florida we have many artificial ponds while in others the landscape is dotted with large and small lakes. This article will deal with artificial impoundments and natural lakes up to twenty-five acres in size. Natural lakes consisting of more than twenty-five acres are usually difficult to manage and any extensive efforts in that direction ordinarily prove to be excessively expensive.

Since a portion of the pond management program deals with providing assistance to the private pond owner, let's take a look at the benefits derived from such a program. The creation of new bodies of water not only increases the number of acres in fish production but also helps to relieve fishing pressure on public lakes and rivers. In areas which do not have an abundance of lakes and streams this is very important. Fertilized ponds increase the fertility of the stream, thereby increasing the food supply for all fish in the stream. They also decrease the sand and silt deposits in the stream channel. Ponds check the flow of streams, act as settling basins, and cause sand and coarser particles of silt to settle out, thus preventing the sanding of the stream channel below.

Many ponds become marshes in the upper end because of the silt and mud that is dropped by the stream. The sand and silt trapped in these ponds would have been deposited in the stream channels if the ponds had not been built. Ponds finally become filled with sand and silt in some localities. The control of watershed erosion is a necessity if we are to control the silt and sand which is being carried by the streams and rivers. Muddy waters do not support the poundage or kinds of fish that most anglers desire.

Last, but far from least, the assistance given private owners has proven to be a valuable public relations weapon. Small ponds in west Florida have helped the Game Commission to abandon the closed season theory, that many people believed in. This was brought about by the many examples of improperly managed ponds becoming overcrowded with bluegills. Many people have to see to believe.

When a pond is being constructed, it is recommended that, if possible, none of the land that is to be above water level be disturbed. It is occasionally necessary, however, to use earth from an adjacent area to obtain sufficient fill to build the dam. If areas that will ultimately be above water must be disturbed, they should be vegetated as soon as possible. The same is true of the dam itself. Both the surrounding scraped slopes and the fresh earth of the dam will add considerable silt to the pond with every shower and storm. No time should be lost in planting grass or shrubs. In the south, Bermuda or Bahia grass is commonly used.

An ideal pond site should be selected to insure:

1. A good reservoir in which to impound water.
2. A water supply which is dependable and uniform as possible. Springs are ideal sources of water.
3. A water depth of at least 6 feet over a portion of the area.
4. A moderately small watershed to avoid flood problems, and one that is protected so as to keep run-off waters free of silt. As a means of preventing the growth of aquatic plants along the margins of ponds, it is recommended that the edges be deepened to a depth of 18 inches.

No artificial dam should be constructed unless it is provided with a drain valve and pipe. A valve is essential for proper management. At the time the valve is closed and the water starts backing up, the stream should be treated with rotenone to eliminate any wild fish which may be present.

Bodies of water which are either new or have been renovated are stocked in the fall of the year with bluegills and in the spring with bass fingerlings. The stocking rate for fertilized ponds is from 800 to 1500 bluegill fingerlings per surface acre followed by 100 to 150 bass fingerlings per acre the following spring.

Chemical analysis will reveal basic facts which are of importance in formulating management plans for any body of water. John W. Woods, Fisheries Technician of the G&FWFC, is shown here making an analysis of a water sample.

Bodies of water which are either new or have been renovated are stocked in the fall of the year with bluegills and in the spring with bass fingerlings such as those shown in the photo above. From 100 to 150 bass fingerlings per acre is considered the proper rate of stocking in fertilized waters.

For unfertilized waters, the stocking rate is usually 400 bluegill fingerlings per acre and from 40 to 60 bass fingerlings per acre.

When fertilization is recommended, commercial fertilizer is used. The analysis of the most useful of the commercial fertilizers for this purpose is 6-8-4 or 6 pounds of nitrogen, 8 pounds of phosphorus, and 4 pounds of potash with the balance of each one hundred pounds consisting of sand or other filler. The fertilizer is applied at the rate of 100 pounds per acre every ten days until the water becomes cloudy in color. Sometimes an extra ten pounds of nitrate of soda is added per acre.

For successful management of the pond, there are certain principles of fish production which must be considered. Some of these are:

1. All fish are dependent for food directly or indirectly upon plants.
2. The weight of fish which can be produced is dependent upon the ability of the water to produce the necessary plants.
3. The ability of the water to produce the plants is dependent upon sunshine, temperature, carbon dioxide, minerals, and oxygen in the water.
4. The natural fertility of the water is dependent upon the fertility of the watershed. Some sandhill lakes support only 30 pounds of fish per acre, for example. Fertile lakes usually have from 200 to 2700 pounds of fish per acre.
5. The fertility of natural waters can be increased by the addition of inorganic fertilizers.
6. After the essential minerals are provided by fertilization, the next most important limiting factor in aquatic plant production is carbon dioxide.
7. The microscopic plants are the principal food producing plants for fish.
8. Microscopic plants are most desirable food plants because of their high nutritive value, short life, mobility and small size.
9. The rooted plants are less desirable and often are detrimental because of their long life cycle, size, and other reasons.
10. The longer the food chain from plant to fish for any one species, the lower the poundage which can be produced.
11. The weight of fish can be composed of a large number of small fish or a smaller number of larger fish.
12. For short periods of time, we can regulate the number by stocking the right number in a new pond.
13. For longer periods of time, the numbers of fish in a body of water must be controlled by the presence of carnivorous species.
14. In order for a body of water to produce yearly harvestable crops of fish there must be a balance between carnivorous and the forage species.
15. Within one year after stocking with adequate numbers of fish, a pond is supporting close to the maximum weight of fish for which food is available. This is why we recommend the ponds be fished after the bass have spawned once.
16. The amount of food required to maintain a 1 pound fish is less than the amount of food required to produce that 1 pound.
17. The rate of growth of fish within wide limits depends upon the amount of food available per individual. We have on record some rather amazing growth rates for a 22 months period including a bass which measured 15.7 inches in length and weighed 2.4 pounds and one which measured 19.7 inches and weighed 6.5 pounds.

These bass were stocked as fingerlings and were taken from the hatchery pond at the same time. At the time of stocking the bass averaged 2 inches in length and were approximately 6 weeks of age.

Many individuals are under the impression that the fertilizer is put into the ponds for the fish to feed upon. This is not true. All fish are dependent either directly or indirectly on plankton (microscopic plants and animals). Some kinds of fish use plants directly while others feed on microscopic organisms and the immature stages of various insects. This is best shown by using a so-called food pyramid which indicates

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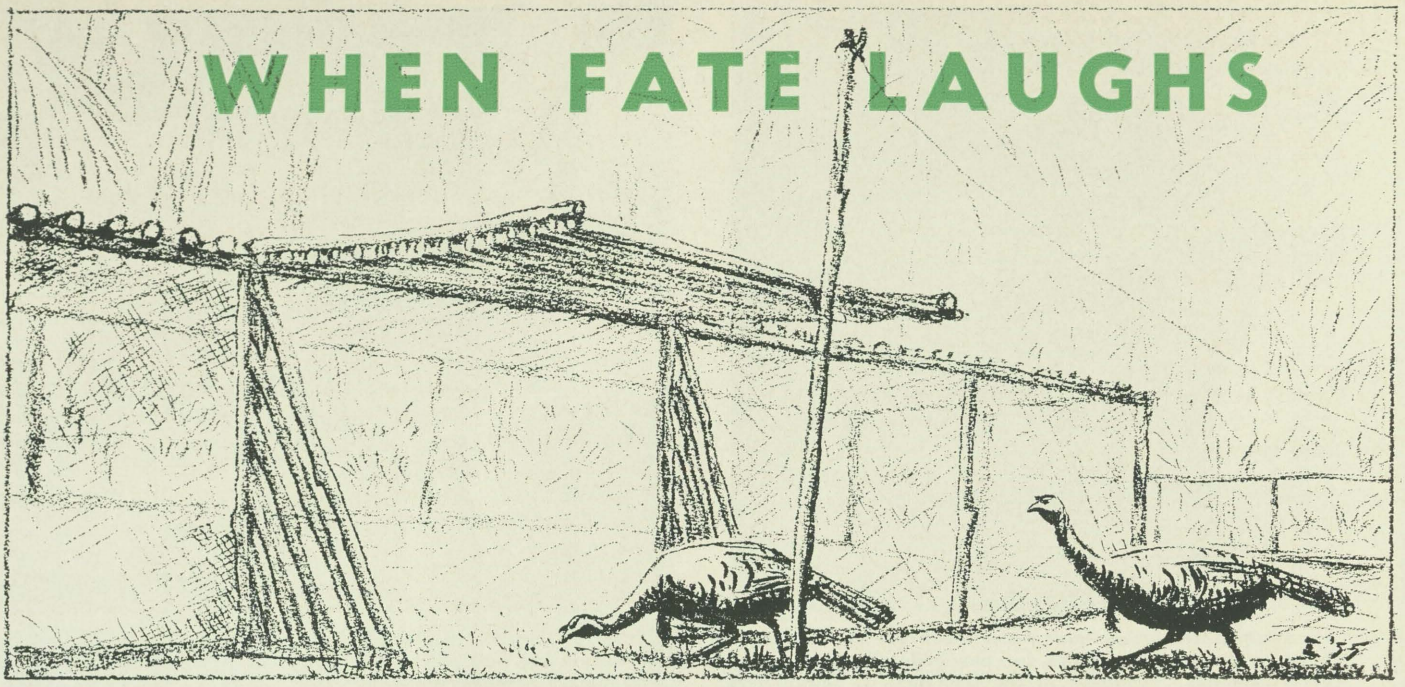
WHEN FATE LAUGHS



Illustrated by the Author

By FRED EVERETT

SOMETIMES FATE not only smiles, she bursts right out laughing. She just did that to me a couple of hours ago, so I should know.

Did you ever try to trap wild turkeys? Especially a big old gobbler and a hen and have only a couple of days to do it in? If you did, then you will begin to understand what I mean. If you didn't, then let me brief you on some of the details.

Right now I'm sitting in the back seat of my studio —my auto, that is,—drawing board propped on my lap with the top resting on the back of the front seat, the way I always do my writing when out on field trips or just working along some sweet water where I can stop writing and go to fishing at the first dimple of a rising trout.

This time it is February and I'm at Palmdale, Florida, parked in back of the little registration booth where, during the open season, lucky hunters can sign in to the big turkey and quail public hunting area, called the Fisheating Creek State Game Management Area. Believe it or not, Lou Gainey, in charge of the wild turkey work here in this part of Florida, and I sleep in that little box on an over-and-under double bunk. The rest of Lou's gang sleep in another booth further down the road past Fisheating Creek, the stream that gave such a distinctive name to this area.

Actually the area is divided into two parts, the part on this side of Route 27 (the west side), containing some 100 thousand acres, is open to public hunting. The other side, with 125 thousand acres, is closed as a refuge where both quail and wild turkeys propagate in peace and furnish birds for restocking in the hunting areas and other places where the birds may be needed.

The Game & Fresh Water Fish Commission of Florida has 21 of these game management areas scattered around the state, totaling over 2½ million acres, only part of which has turkeys. Sportsmen pay a special fee of $5.00 per season for permits to hunt on these areas. They are checked in and out and careful records of the game bagged are kept for future use in controlling the seasons and bag limits and also for scientific information valuable to game management. It's a great program and a boon to the sportsmen whose license monies pay the bills.

Well, let's get back to that laughing Fate. Wild turkeys have always held a fascination for me from the first days I saw pictures and read stories of our Pilgrim Fathers' adventures with that noble American. No doubt, to most people, the name "wild turkey" means some mysterious, legendary bird of the past as it did to me for many years.

But "it ain't necessarily so" because that grandest of all game birds, the one which I think should have been chosen for our national emblem, is very much alive today. Of course there are some places where it used to exist that see it no more, but that's only where civilization has usurped its home coverts. Naturally it can't live and perpetuate its race in cities, factories or on bare paved roads. But it can survive where man has not destroyed its habitat or has furnished it new "mansions" in which to live. That's what it is doing right now, today, and should be doing for a long time to come if the wildlife scientists and workers are given the necessary cooperation, authority and funds with which to carry out their programs.

Say, did you know that there isn't just one little ol' kind of wild turkey in this country? I thought there was until I started seriously studying the bird. Then, to my surprise, I found out that there were not only two or three but five different kinds or subspecies in this land of ours with an extra species down Central and South America way. That made it even more mysterious.

That's why I'm down here in southern Florida where one of the subspecies, called Oceola, lives. It is native only to this part of Florida. It isn't much different from our more northern or Eastern Wild Turkey, called Silvestris, and very few people even know or can tell that difference. Since I hope, some day, to be able to paint the various kinds, I've got to become one of those few who do know. So, here I am, doing what comes naturally—that is, trying to see this turkey and study it. To see it close up, handle it and sketch and color-photo its details, it has to be trapped. That's

Fred Everett has had a life-long interest in wildlife. Since 1926 he has been a free lance writer and painter and has published many of his own works. Two of his recent volumes, "Fun With Trout" and "Fun With Game Birds" have been acclaimed as setting new standards for sporting-conservation books. Fred was Senior Editor in the Division of Conservation Education, New York Conservation Department from 1945 until 1953 when he retired to again devote full time to his free lance writing and painting.

where Fate comes in. If she doesn't at least smile, Brother, you might just as well pack up and go home. But when she laughs—ah-h—that's something else yet!

It was two years ago that I first came down here and the Big Brass up in Tallahassee turned me over to Lou Gainey. Maybe I shouldn't call Earle Frye, the assistant Director of the Commission, by that name —he's too cooperative a guy with an extra lot on the ball. Anyhow, he did the turning-over and I had my first session of living in the little wooden box with Lou, getting up almost before going to bed; riding (and getting bogged down) miles through swamps, flooded pasture-lands, among herds of scrawny, queer-looking cattle and half-wild pigs and shoats which appeared out of and then melted back into the blackness as we bounced and rattled along in the little four-wheel-drive jeep; dodging cypress-tree knees, palms, palmettos and brush, finally to park under some kind of cover to hide the jeep from ever-suspicious turkeys while we baited, set the trap and huddled in the blind through mosquito-hours waiting for any old wild turkey which might be foolish enough to walk into our trap.

That was two years ago. We sat and waited mornings and nights for four days. Oh, yes, we saw lots of wild turkeys. We heard them gobbling and "pert"-ing and calling before and after leaving their roosts in the trees. We spotted them out on the pastures. They even came all around us at the traps. And the last morning I sat huddled and shivering at one trap while Lou watched another. The trap I had was different from the one on the previous evening. At that one, after Lou had scattered the corn-bait and left for his blind, two old sows, each with six shoats, came hot-footing it to the trap as though they knew why Lou had been there. Maybe they were disappointed that he hadn't spread the red carpet for them, too. But, if so, they didn't show it. Instead, they cleaned out that bait in no time flat, then lay down and slept off the banquet. I took color shots of them to show Lou his new species of wild turkey.

That last morning Fate smiled faintly at me by sending about twelve wild hens to the trap. A few went over the low fence and started eating the corn. Slowly but surely three or four approached the trap, pecking their way step by step in under the overhanging wire door. A quick glance upward and back out they went, as much as to say, "Oh — no, you don't!"

Then one dumber hen forgot to look up and entered the trap. A frantic yank on the cord and I had my first turkey. There was one big moment of pandemonium as the other hens squawked and beat it out of there in all directions. I stood up in the blind and there in front of me stood two big gobblers, all unconcerned. How they got there I'll never know.

I tried to sit back slowly into the blind so that I could study them in the flesh, as it were. So long as I was in sight, they watched me curiously, apparently unafraid. The moment my head disappeared, away they went as though Old Nick were after them. So much for studying the Toms for that trip because it was my last day.

But I had me a hen, anyway, so the trip was not all a failure. To study the color of the head, eyes, feet and other changeable parts, one must have a live bird. At least I had a live hen. Or so I thought. She had broken her neck in the mad scramble! Fate's smile had been awfully weak.

That was two years ago. Since then Fate must have been taking vitamin pills or the new wonder drugs. She was in fine physical condition and good humor. Maybe the new traps Lou had had made were partly the reason. You see, for some strange reason the turkeys are very suspicious of wire tops in the traps. So the new ones were covered with small logs and poles; even the raised trap door was made of them.

Whatever the reason, in a few weeks before I got down here Lou and his gang had practically completed their quota for the year. They had trapped 135 in four weeks; it took them two weeks to trap the next 14 birds. To be able to get me a he and a she in a couple of days seemed just about out of the question at this late date. But I was here and we couldn't get them without at least giving them a whirl. So we vowed to give it the good old college try.

Came the first (yesterday) morning when I had to climb down out of the top bunk before five o'clock, splash cold water in my face and crawl into the jeep. Wait a minute—not a little jeep this time but a much more luxurious four-wheel-drive jeep truck. That's right, much more room in which to bounce around because its extra height made it jerk and buck and pitch far more than the smaller jeeps. So we made our bigger safari through the swamp, mud holes and such to a brand new site and trap. We parked the car under some trees about 100 yards from the trap, put out the bait and sat down to slap mosquitoes and wait. I even had a folding stool to sit on! Things certainly were looking up. And we were constantly looking through peep holes.

Actually it was a beautiful morning. I don't know how you feel about it but I honestly think the early morning hours hold something special. There is that about the awakening of life with the coming dawn which holds a thrill and feeling all its own.

That was especially so this morning. Here I was with one heck of a good companion who was in sympathy with me and the life around us. Most wildlife workers do their jobs because they love them; certainly not entirely for the meager salaries they receive. I knew Lou was that kind. And I was at a work I, too, got a real thrill in doing. The weather was balmy, the mosquitoes not too hungry, and the wildlife around us was abundant and ready to tell the world they were getting up for another full day of protected happiness in the refuge.

While we were parking the car, Lou, in a low voice, had explained that we were in a roosting area, maybe under roosting turkeys right then. It was proven later that we were, much to our regret.

While daylight grew brighter, first one, then another kind of wildlife awoke. The hooting of the owls gave way to the raucous cawing of the crows; frogs croaked and grunted; warblers, cardinals, pileated woodpeckers added their greetings while sandhill cranes and other swamp long-legged, long-necked, feathered would-be songsters gave vent to assorted sounds.

The light grew brighter as the hour hand approached

(Continued on Next Page)

a quarter to seven. Not a turkey had called. I looked quizzically at Lou. He held up his hand in a gesture to listen. Off in the distance came a call. It was like a couple of crow noises intermingled.

"Hear that? A gobbler." Lou seemed sure. I listened intently.

Almost overhead came a loud turkey call . A pause, then close by an old tom rolled out his loudest gobble. As the minutes passed, first one, then another turkey —in front, to the right and to the left answered the morning roll call. I kept looking at Lou who knows the ways and habits of these birds in this area as none other could. Lou looked at his watch.

"They won't fly off their roosts much before seven," he whispered. I nodded and looked at my watch. About five minutes to go. It was three minutes when the rustle of huge wings, not 50 yards away, lowered the first bird to the ground. The calls kept coming. Then more wings and more calls.

Suddenly Lou pointed straight ahead to a clearing about 100 yards down under the palms and oaks. Dark shapes began to change into wild turkeys, one a strutting tom. Eventually about a dozen gobblers and hens were moving about, pecking a little here and there, moving slowly in our direction.

What a thrilling sight! Gorgeous, magnificent, iridescent royalties of the coverts. My heart was pounding and my breath halting as I watched. One hen started walking our way, calling constantly as she came. I hoped she was telling the others to hurry to our banquet.

She flew over some water and came on nearly half way to the pen. Suddenly, behind us in the trees where we had parked the car, a turkey set up a wild commotion of loud calls new to me, then out of the trees it went on noisy wings, still calling, and off into the distance. The hen in front of us craned her neck, listening, called a few times and then headed slowly around to our left in the direction of the departed turkey which, we believe, had spotted the car and wanted no part of us or it. Slowly but surely the other turkeys made their way around and away. About eight o'clock, we packed up and drove back to Palmdale. We hadn't trapped a bird, but what a thrilling, beautiful morning it had been!

Other state business prevented our trying the traps again in the afternoon. Late last night I told the others that Lou and I would each take a trap in the morning—Lou would catch one and I, the other model needed before he and the others had to leave for a meeting in Okeechobee. Then I could stay here, write my article and, in the afternoon when they got back, I could make my studies and return to Rio where I had left my wife at my sister's home. Simple as that. Boy, did they razz me!

Well, here I am, at lunch time now, writing! Does that mean anything to you? Here's what happened this morning.

We finally managed to wake up shortly after five, splash a little cold water on our heads and drive to the traps. This time Lou left me at the same place where I had had the experience with the pigs, while he went on to the trap of yesterday. One of the brand new traps with pole tops had been constructed here and the area was fenced in. No pigs came this time and I spent a quiet hour or so with very few mosquitoes and a nice, balmy air. The birds and animals were nowhere near as boisterous as yesterday morning. And not one turkey made as much as a single, tiny peep.

Seven o'clock came and went and still not a turkey sound. Crows had ignored the corn, only cardinals, those beautiful "red birds", and a couple of squirrels were at the bait. Seven-fifteen, seven-twenty, and nothing. I began to think I had pulled a blank. Certainly I should have heard some turkeys even if they didn't come near. I wondered how Lou was making out. It was unusually quiet all around.

Of a sudden the birds and squirrels fled the trap as though shot at. I held my breath and listened intently. Not a sound. Nothing came into sight on any side. The squirrels and birds returned and started eating peacefully. Then came a little splash in the water behind me. I stood up and peered through the peephole. For a moment, I ceased to breathe.

There, not ten feet away, a hen turkey seemed to be looking me straight in the eye! She gave faint, questioning little "perts" as I sat down slowly, quietly. She kept repeating the note as she slowly, step by hesitant step, walked along the fence around the trap. I looked through the other side of the blind and there stood another hen! I don't think those

birds walked there, I think Fate just created them there as the beginning of her laugh.

With the squirrels and songbirds eating the corn, naturally the hens wanted some too. Since no hole in the wire fence could be made big enough by pushing their heads through, one hen finally decided to hop over. The other gave up and walked away. The first started feeding on the "teaser" corn outside the trap but didn't go anywhere near the door. Minutes passed by.

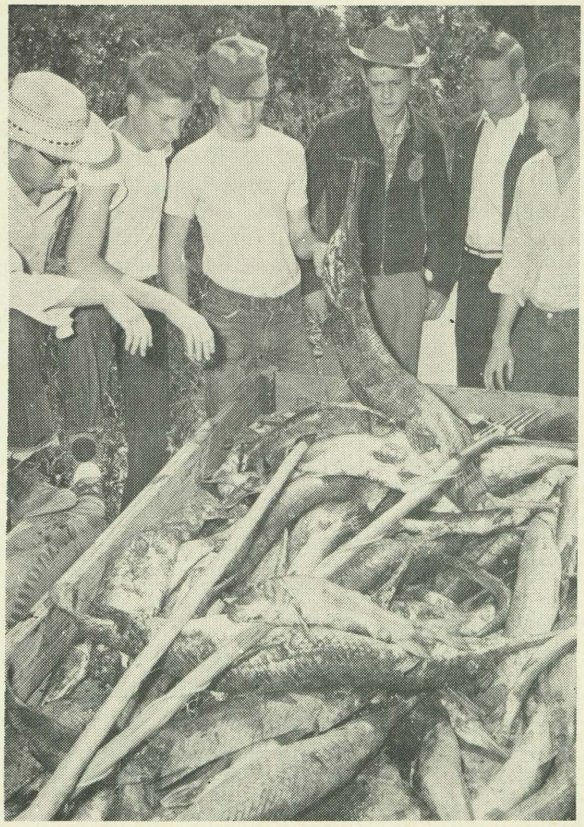
Something distracted my attention for a fraction of a second—maybe a mosquito. When I looked toward the trap again, there stood two gorgeous gobblers! The only way they could possibly have gotten there in that tiny interval was for Fate to have touched a wand there and created them out of thin air. I'll swear to it!

Those gobblers were starving. In no time at all

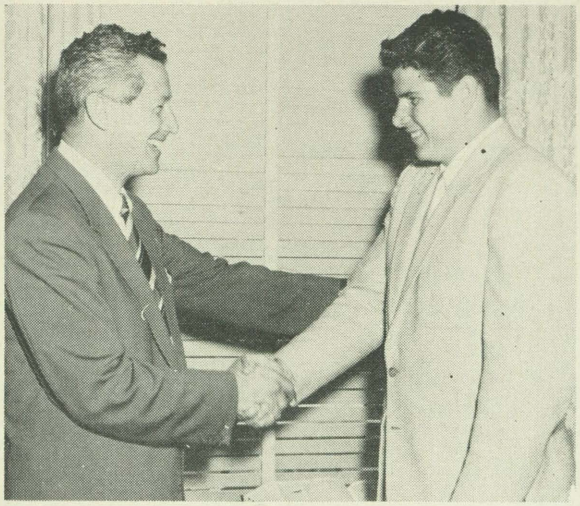
(Continued on Page 38)

AROUND THE STATE

Tan Airlines Pilot E. Brice helps G&FWFC fisheries specialists Bill McLane (left) and Mel Huish (in plane) load a shipment of Florida largemouth bass for transport to Central America. The fingerlings were carried in special tropical fish containers and arrived at their destination, American Fruit Company property in Honduras, in excellent condition.

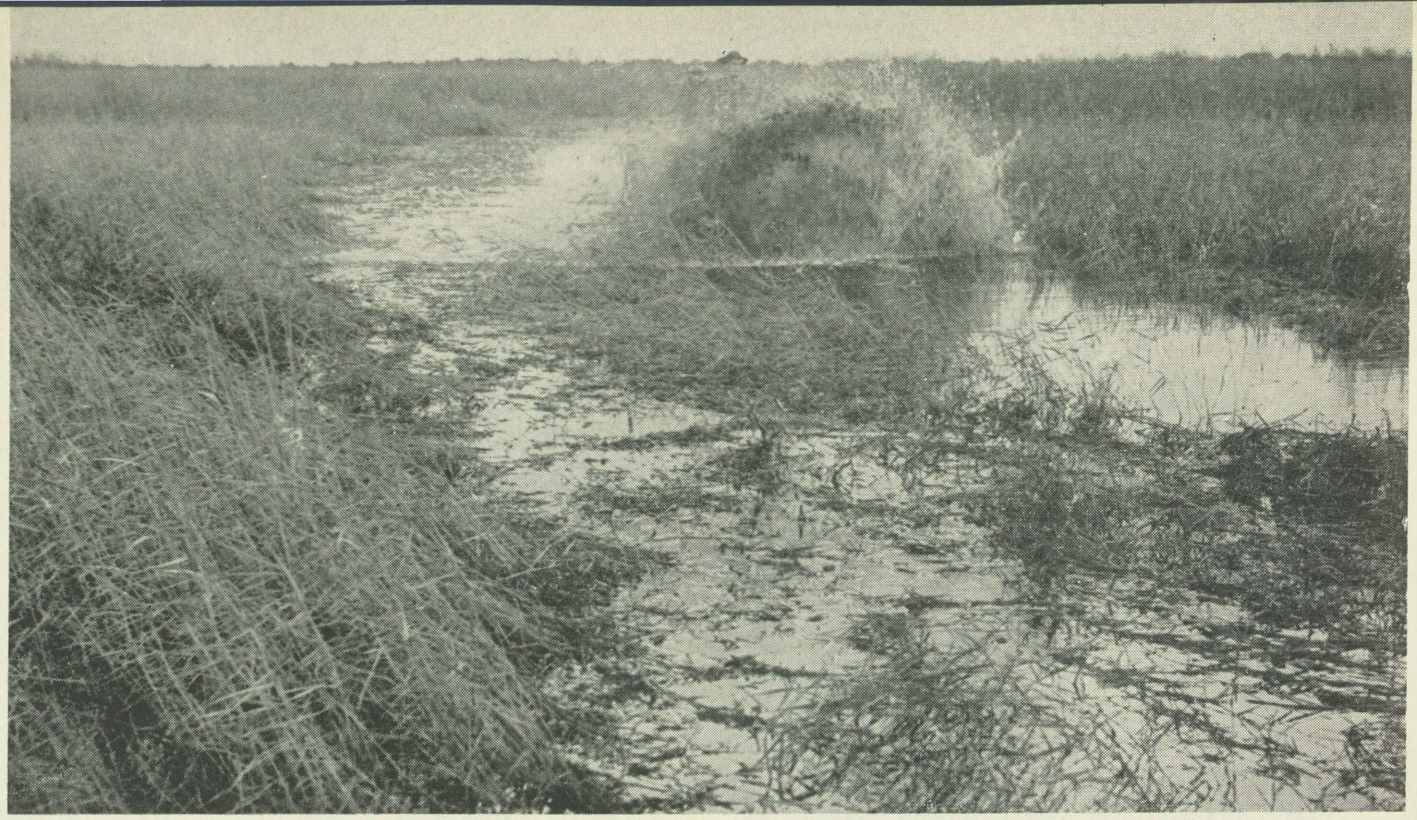


Members of the Tallahassee Junior Rod and Gun Club display a trailer load of gar which they removed from the Wakulla River recently. The boys staged an after-dark gigging expedition under the supervision of Wildlife Officer Ross Summers.



Governor LeRoy Collins offers his congratulations to Phil Alexander of Miami, selected by the Governor's Committee to represent Florida at the 1955 Young Outdoor American Conference in Chicago. Phil was chosen from candidates representing all types of youth organizations in Florida to serve as the Sunshine State's representative to the Izaak Walton League sponsored meeting.

C. R. "Bob" Dean, Birmingham, Alabama, poses with a 9¾ largemouth which he landed during a recent stay at Bass Capitol Resort in Crescent City. Putnam County's Crescent Lake-St. Johns River area claims the title "Bass Capitol of the World," and with bass like the one Bob shows here far from uncommon, we're inclined to believe they have more than a little justification for their claim.



A rotary marsh digger in action. The digger resembles a flat, steel-decked, open boat about 25 feet long. Rotary blades at the blunt prow dig a channel 4½ feet wide through the dense vegetation leaving a water trail more than two feet deep.

FLORIDA'S HUNTING AND FISHING PICTURE

THE EVERGLADES

TWO OF THE most important jobs confronting any governmental conservation agency are providing areas for game birds, fish and animals, and making such facilities available to the sportsman. We in Florida are to be congratulated that such programs are being carried on by both the State Game and Fresh Water Fish Commission and the U. S. Fish and Wildlife Service. Nowhere is this policy more in evidence than in the combined efforts of both agencies in a vast area in the southeastern part of the state which embraces much of the Everglades.

First let us consider the area itself and its potential importance to hunting and fishing. Later we will discuss how this great potential is being made available to the sportsman.

It is an established fact that agricultural, urban and industrial interests are making determined grabs at any and all land and water resources available. The domain of the hunter and angler is threatened from all sides. Evidence of this is apparent everywhere. It no longer takes an octogenarian to recall the "good old days" when game was to be found in areas that have since been given over to real estate developments, factory sites, cattle ranches and truck farms. The age of rapid expansion is upon us, and wildlife interests are waging a desperate battle to hold their own against inroads of every sort.

The main bulwark against this invasion is publically owned land administered either by the state or Federal government, or jointly by both. Hunters and anglers, in most cases, simply don't have the money to purchase huge tracts of land, so it falls upon governmental agencies to acquire and administer the areas necessary for any semblance of good hunting and fishing.

To the everlasting credit of the Florida Game and Fresh Water Fish Commission and the U. S. Fish and Wildlife Service, this had been done in South Florida. Had the land acquisition project not gone into effect, fishing and hunting over a wide section of the state would soon be nothing but a memory. Deep felt thanks must also be given to the Florida engineers who are directing a multi-million dollar water control project aimed at rehabilitating immense areas of land in 11 counties in the southeastern part of the state.

As far as wildlife is concerned, nearly one million acres of land and water has been set aside as a "conservation area." This virtual wildlife empire extends roughly from the northern part of Palm Beach County to the Tamiami Trail in Dade County, and westward on a line with Lake Okeechobee. The state part of the project—nearly 800,000 acres—is as yet unnamed. It is simply referred to as the "conservation area." The Federal part—140,000 acres—is known as the Loxahatchee National Wildlife Refuge.

The combined project is far from completed, and it behooves the sportsmen of the state to keep a watchful eye on its progress, lest appropriations lag and certain vitally needed engineering features are neglected. In my extensive travels throughout America during the past several years, I have observed, first hand, many wildlife restoration projects of various kinds. In my considered opinion, none of them surpass the combined Federal-state project now coming into being in southeastern Florida. When completed,

This is the third of a series of articles covering Florida's comprehensive wildlife management program which has been designed to assure the continuance of good hunting and fishing throughout the Sunshine State.

By CLEVELAND VAN DRESSER

it can well be one of the greatest migratory bird and game fish areas in the entire United States. The angler and hunter may give fervent thanks that this is so.

The program came into being through a cooperation between seemingly diversified interests that is virtually unmatched in the history of land and water development. In view of the past history of the treatment of South Florida, such an achievement is remarkable indeed.

Over the years one of the greatest despoilers of waterfowl and game fish habitat has been excessive drainage. Nowhere in America has this been more true than in Southern Florida. For more than 30 years the watchword in the Everglades has been "drainage." Canals and ditches almost without number have been dug — each contributing in varying degree in pulling fresh water out of the Everglades and Lake Okeechobee and dumping it into the sea. So drastically was the fresh water table lowered over the years that it wasn't so long ago that residents on the lower East Coast were drawing brackish water out of their kitchen faucets. In addition, the lowered fresh water table was a great contributing factor to the immensely destructive muck and peat fires that ravaged the Everglades during dry spells. Hundreds of thousands of acres of productive land have literally gone up in smoke over the years—to be replaced, if ever, only by the work of centuries.

It got so bad that waterfowl had just about given up part of South Florida as affording anything resembling a place to exist, and in some areas fish had long since departed completely.

Seven years ago this headlong policy of destruction was halted, and the first steps were taken toward the long process of regeneration.

In 1948 Congress passed an appropriation that was to spearhead a vast flood control and water conservation program for South Florida. Note the aims of this program: flood control *and* water conservation. Upon the heels of this legislative action came the creation of the Central and Southern Florida Flood Control District (known as FCD — Flood Control District), a state setup created upon a framework of laws which had been previously enacted. A working agreement was set up whereby Federal and state funds were pooled and certain tremendous engineering work was undertaken in a vast program to control and conserve the great water resources of South Florida. The U. S. Army Engineers do the work, and the Florida engineers are the directing force.

No longer is water allowed to rush headlong to the sea during rainy spells. It is being conserved for use when needed during dry periods. That is the basis of the entire project, and it is proving a veritable life saver for the erstwhile rapidly diminishing wildlife populations of South Florida.

In the main, the huge water control project was conceived for the benefit of farming and cattle interests. However, Florida engineers in general and Lamar Johnson, former chief FCD engineer in particular, were fully aware of the high value of wildlife that could be affected by the project. Since construction started six years ago, hardly a levee is built, a waterway dug or a pump installed that does not take wildlife values into consideration. The policy was somewhat different for Army Engineers whose record for wildlife conservation frequently leaves much to be desired.

Describing the engineering features of this extensive program would be too involved. Insofar as sportsmen are concerned, they are aimed at the creation of the million acre conservation area into which water is being directed for storage purposes, to be drawn upon for agricultural needs during dry spells.

The possibilities for waterfowl and fish in this near-million acre tract are manifold. Some of these possibilities have already come into being—more are planned for the future.

I have gone over this area pretty thoroughly and can report excellent results in the relatively short time it has been in existence. The northernmost part is administered by the U. S. Fish and Wildlife Service and is known as the Loxahatchee National Wildlife Refuge, as stated previously. Its 140,000 acres is already partially enclosed by dikes.

It is the ultimate plan to enclose the entire million acres with levees. So far, all but about 110 miles have been built. When all levee construction is finished, the area will be a heaven for waterfowl and fish.

Before the dike construction, the water level fluctuated so violently (by reason of unimpeded drainage) that much of what was once a marsh area was being transformed into semi-arid prairie. Today, because of the levees, the water is being held, and its level is rising.

Gerald Baker, manager of all Federal wildlife areas in South Florida, has embarked upon an extensive program of wildfowl food planting. Now that he has some control over the water level, this can be done. Ducks are coming back and the game fish population is getting a tremendous boost. Some 25,000 pounds of bass were taken during a four-months period in 1954 out of an area that would hardly have supported a determined mudfish a few years ago. In fact, the fishable area on the Loxahatchee Refuge during 1954 was only 1,000 acres. It will ultimately be more than 30,000 acres. Draw your own conclusions from these figures.

Baker has also embarked on an ambitious program of establishing Canada geese on the area. A few stopped off in the winter of 1954-55 —more are expected by the end of the year. One of the main objectives of the undertaking is to deflect the winter migration of ducks to islands in the Caribbean. The birds take a terrific beating there, mostly because of indiscriminate shooting, lax hunting laws and "game hogs."

Establishment of an ideal waterfowl and fish area is not being accomplished without difficulties. In these days of comparatively restricted wildlife terrain, it is often necessary to produce and support far more birds and animals than Nature originally intended. The limiting factor in such a program is food—or rather, lack of it. To speed up production, so to speak, a trained biologist, Ralph Andrews, has been detailed to discover and develop various kinds of waterfowl foods that will thrive in a subtropical climate.

As the water level rises in Loxahatchee, it is slowly killing off undesirable plants that were growing in semi-arid conditions. It is Andrews' job to see to it that such vegetation is replaced by plants that are beneficial to waterfowl. Several hundred acres were planted to such vegetation last year—more will be planted this summer to be harvested

(Continued on Next Page)

by ducks that come south this coming winter.

Andrews has also established suitable goose "browse" for the great Canadas which Baker is endeavoring to establish at Loxahatchee. Several dozen clipped birds will be in an enclosure this winter, the idea being that free wild geese will join their temporarily incapacitated brethren.

Most everyone knows that geese return year after year to the same area, once they are convinced that area provides food and shelter. With this idea in mind, Baker has clipped his captive geese—not "pinioned" them—the difference being that the following spring his captive geese will be able to fly north—their wing feathers will have grown out by then. In the meantime, Baker hopes to make things so attractive the geese will return to Loxahatchee by choice and will bring their friends and relatives with them.

No extensive program for reestablishing fish at Loxahatchee is planned. Fortunately, it is not needed. When the water level is finally established, the fish will take care of themselves. So phenomenal is natural fish reproduction in South Florida, that Baker confidentially predicts a *one thousand percent* increase in fish populations when the entire levee and water storage program is completed!

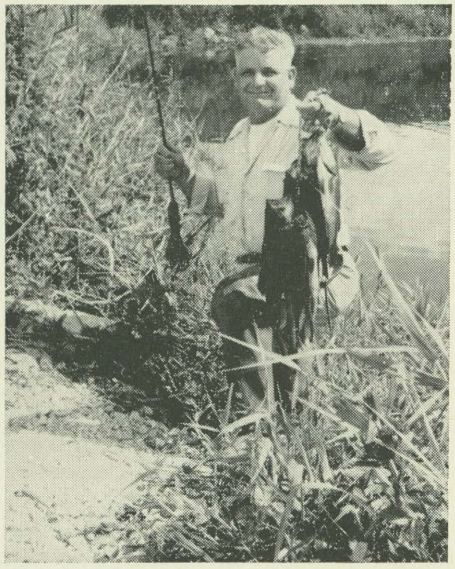
Although the main purpose of the federally administered Loxahatchee Refuge admittedly is for protection and restoration of wildlife, the sportsman is far from forgotten. Roughly 25 percent of the area is open to the duck hunter during the season, and almost half the entire refuge is open to the angler. A certain portion of Loxahatchee has been set aside as an inviolate sanctuary. Native ducks are expected to nest in this protected section as well as numerous other water birds. Future populations of all wild bird species depend upon favorable nesting conditions. Far thinking sportsmen will agree that providing such nesting facilities is a wise policy.

And now we come to the "availability" of this million acre domain.

Until the advent of the airboat, the only way anyone could get around in much of the Everglades was by Seminole Indian canoe. Tales of fabulous fishing have been coming out of those mysterious depths for years, and exploration by airboat has proved that a lot of those tales are true. Transportation by airboat is effective, but there are certain drawbacks.

Lately both Federal and state wildlife officials have been concerned over the increase of these hybrid vehicles. They make a terrific racket and scare the daylights out of the waterfowl. Unchecked use of airboats, it was found, was defeating the very purpose for which the wildlife areas were created. Their continued and expanded use became a problem.

Finally, in late December of 1954, the problem was solved. Man finally gave up trying to invent machines that would make the area accessible, and turned his attention to opening up the Everglades instead. Mohammed was having a tough time getting to the mountain, so the mountain is being brought to Mohammed.



Fishing is good in the Everglades as this happy angler will attest. It will be even better when the management program gets into full stride.

Today, an unique machine is digging channels throughout the Everglades—channels which can be traversed by canoe, outboard or small inboard. By this summer, hundreds of miles of such channels—"water trails" they are called—will crisscross a virtually virgin area. Sportsmen will be fishing and hunting in regions hardly seen by a white man before. In truth, opening the Glades to conventional boat travel represents the penetration of a vast, untouched wilderness, and will make available one of the greatest virgin fishing and hunting areas remaining in the United States.

The machine doing the work is known as a "rotary marsh digger," was developed in Louisiana, and was brought to Florida in December of 1954. Its manufacturer, the W. C. Rodriguez Shipyard of Larose, La., has used the machine successfully in the marshes of the bayou state.

The digger resembles a flat, steel-decked, open boat about 25 feet long. Rotary blades at the blunt prow dig a channel through the dense vegetation 4½ feet wide, leaving a water trail more than two feet deep in the wake of the craft. The digger averages about three miles an hour.

Literally hundreds of thousands of water acres of the Everglades are covered with sawgrass, pickerel weed and other vegetation. It is utterly impossible for any orthodox boat to navigate through the stuff. Beneath this overlay of vegetation, fish reproduce by the millions. Open areas in the vegetation provide habitat for waterfowl as well as room for fish to thrive and grow.

The rotary marsh digger is not only making channels, it is being used to clear out thousands of fishing holes scattered all over the Glades. One of the meanest jobs in South Florida is keeping fresh water areas cleared of vegetation. The stuff grows with great tenacity and amazing rapidity. Many thousands of potentially productive water holes are grown over with hyacinth, pickerel weed and other unwanted vegetation. The marsh digger clears out these fishing holes, thereby adding appreciably to the already tremendous angling potential of the Everglades.

Once the channels and fishing holes are cleared, the Fish and Wildlife Service and the State Fish Commission anticipate little trouble in keeping them open. Constant use by boats and canoes, plus a spraying now and then with 2-4-D will keep the vegetation in check.

Inasmuch as the channels will penetrate a very large area, both wildlife agencies plan to set up markers and directional signs. Even with a well maintained waterways system, it will still be possible to get lost.

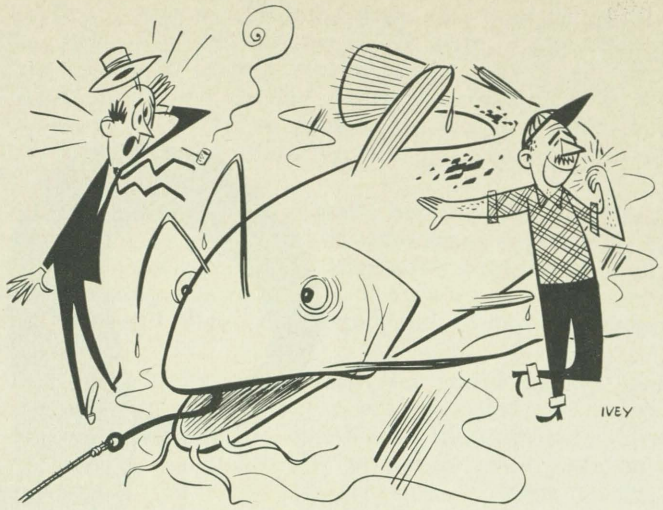
Even so, many a sportsman wouldn't object to being "lost" in the wildlife paradise now being opened up in the Florida Everglades. END.

A small creeper known as the sensitive plant has leaves that wilt at the slightest touch of a human hand.

Hibiscus plants that are killed back by winter frost will usually bloom again the following summer.

AJAX, FLORIDA

By PLATO WINDER



Dear Mister Editor:

The Ajax savannas are noted, as everyone knows, for their enormous fish. Especially bass. A reasonable, careful fisherman with a good-sized can of worms will manage to get himself a nice string of bass weighing anywhere from 3 to 18 pounds each and a much larger string of bream in an all-days fishing. If he knows the right places to go. As far as crappie are concerned, the average fisherman can pull them out until his arm gets sore. It's the same way with shellcrackers at the right season of the year. And if a fellow wants to put out a trot line or a number of set-hooks, he'll wind up in the morning with about as many willow catfish as he's got hooks set out and baited. But none of us had thought too much about the mud cat situation until Les Keith came home from a singing convention over in Georgia.

As all Ajax knows, Les Keith hoists a robust tune; as a matter of fact, some people claim you can hear him way over in Jensen Beach when he puts his mind to it and the breeze is from the right direction. I've known Les Keith to have the entire town of Ajax sitting still and doing nothin' when he was in the throes of a good old revival tune such as "Flee As a Bird to The Mountain." In addition to his singing Les is a considerable liar. Of course, he don't lie to hurt anyone; his lying starts with braggin' and goes on and on and the next thing he knows he is in over his head. It's a fault with Les and he'd be the first one to admit it but somehow it seems like he just can't quit it. If somebody in the crowd tells a lie Les has just naturally got to tell a bigger one. And that's the way it was when he went to the singing over in Georgia; one fellow got to tellin' about the big catfish in his community and another fellow told a still bigger one about the catfish in his area and the next thing Les knew he was invitin' the whole kit and kaboodle to come down to Ajax and enjoy our marvelous catfish. Which was a mistake as Les realized the next day.

Well, Mister Editor, this Spring when Les was gettin' ready to do his first day's Spring plowing, who should show up but one of the fellows from the singing convention. Says he, "Well sir, you invited me over here to catch one of them rip-snortin' catfish and I'm here for that purpose. Let's go."

"I'm plumb delighted to see you," said Les, "and it's a pity that I can't take you catfishin' but you can see how it is; I'm just startin' in with my Spring plowing and I'm late now."

"I can see you're gettin' ready to plow," says the man from Georgia, "and I know you're late but that ain't gonna keep us from goin' fishin'. I'm gonna hire you a man to do your plowin' so you can go fishin' with me."

Well sir, there wasn't anything left for Les to do because the man insisted on payin' for the plow-hand so it wasn't long until a young lad from the Avery district was plowin' Les' mule and Les and the visitor were startin' out fishin'.

"You understand," says Les, "that the Ajax catfish are peculiar fish and, of course, they take a peculiar hook."

"What kind of hook?"

"A hand-made hook about the size of a grapplin' hook. Our blacksmith makes them special."

"Where is your blacksmith?" the stranger demands.

"He's over at Sunset about 6 miles from here," says Les.

"Let's go," said the visitor.

So they drove over to Emmett McCart's blacksmith shop at Sunset and in the course of an hour and a half Emmett had hammered out an enormous hook under Les' direction.

"Now let's go," said the visitor.

"We gotta get a special line," says Les. "An ordinary line won't hold Ajax catfish."

"What kind of line?"

"We'll need about a coil of half-inch nylon," says Les.

"Where do you get it?" demands the visitor.

"At the Ajax hardware store," says Les.

Back in Ajax they secured the nylon half-inch line and after using up 30 minutes in splicing the line to the special hook the visitor said, "All right, let's go."

"Hold on," says Les. "We gotta get some bait."

"What kind of bait?"

"A Dominecker hen about 6 or 7 pounds," says Les.

"Let's go," said the visitor. "I saw some beautiful hens about 2 miles down the road when we were goin' for the fish hook."

"Them was Rhode Island reds," said Les. "We gotta have Domineckers."

"Where do you get 'em?"

"About 7 miles on the road to Pearly Gates," says Les.

"Let's go."

About an hour later Les and the visitor arrived at the lake with the line, the hook, and a 7-pound Dominecker hen.

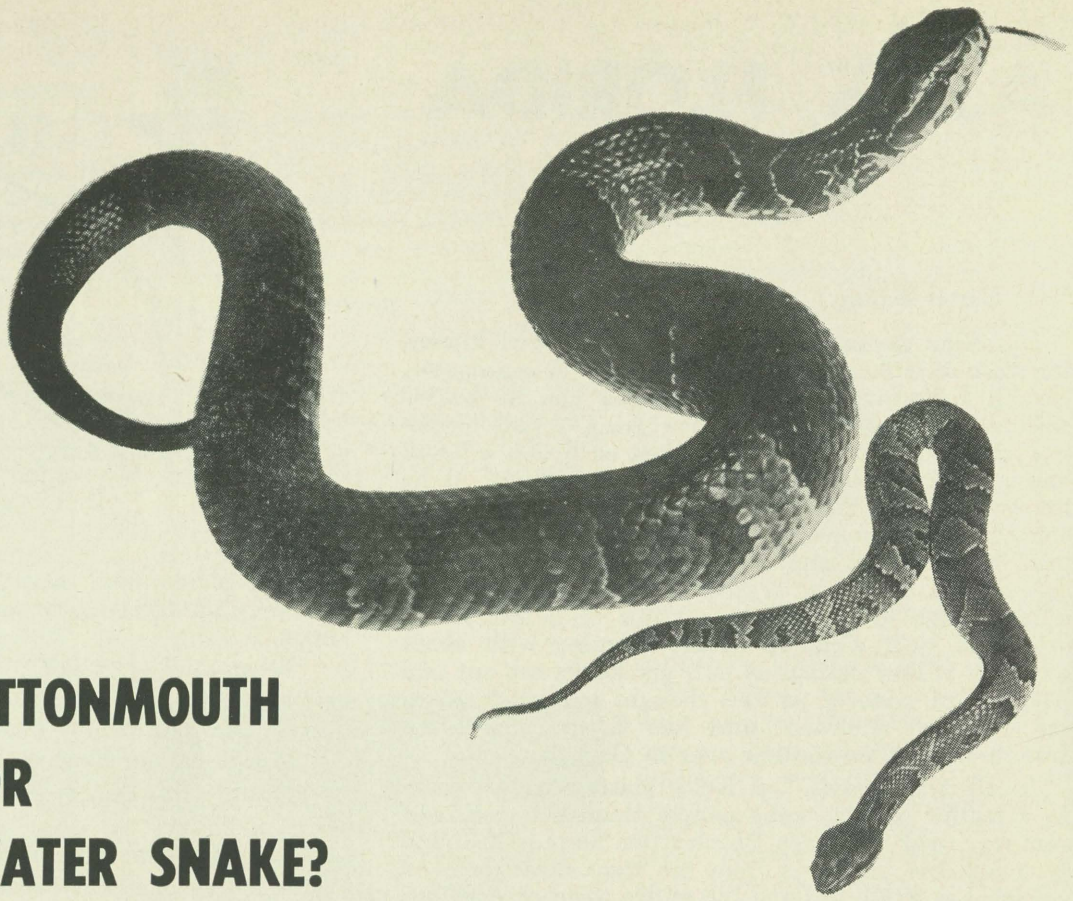
"Where's the boat?" asked the stranger. "Don't we use a boat?"

"Thunderation no," says Les. "You don't want to get drowned, do you? An Ajax catfish would pull you out of that boat before you could say 'Jack Robinson'."

"What do we do?"

"We tie the line to a big tree." And suiting action to the word, Les proceeded to tie the bitter end of

(Continued on Page 40)



DEADLY COTTONMOUTH OR HARMLESS WATER SNAKE?

By WILFRED T. NEILL

HERE AT THE Reptile Institute we're frequently asked, "What's the difference between the poisonous cottonmouth and the harmless water snakes?" Apparently the subject is of considerable interest to fishermen, who want to identify the snakes they occasionally see about lakes and streams.

In this connection we may first consider the geographic range of the cottonmouth. Sportsmen well know that wild creatures do not occur just anywhere; each kind is confined by natural laws to a certain geographic area beyond which it is not found. This is just as true of the cottonmouth as it is of the ruffed grouse, the grizzly bear, the flamingo, or the rainbow trout.

The cottonmouth, or water moccasin as it is sometimes called, inhabits the southern swamps and the lowlands of the Mississippi Valley. Specifically, it is found from Dismal Swamp, near the Virginia-North Carolina border, southward through the lower country of the Carolinas, the southern half of Georgia, and the entire state of Florida. It ranges thence westward through Alabama, Mississippi, and Louisiana to the Rio Grande River in eastern Texas, and northward up the Mississippi Valley through Arkansas, western parts of Tennessee and Kentucky, eastern Oklahoma and southern Missouri to southern Illinois. It does not occur north of this area; the snakes which live about the water's edge in other parts of the United States are harmless. It is true that fishermen in the New England and Middle Atlantic States generally apply the name "moccasin" to a rusty brownish snake which is commonly seen lying in bushes overhanging the water. However, the name is incorrect, the snake being of a harmless kind.

The color of the cottonmouth changes somewhat throughout its life, and also varies from one individual to another. This, of course, makes identification more difficult. Nevertheless, some details of the snake's pattern are constant, and so are worth mentioning. The young cottonmouth (shown in an accompanying photograph) is rather brightly cross-banded, resembling the copperhead or highland moccasin to which it is closely related. The tail-tip of the newborn or very young cottonmouth is a sulphur yellow or yellowish-green; this is not the case with any of the water snakes. A yellow tail-tip, when young, is characteristic not only of the cottonmouth but also its venomous relatives, the copperhead, the Mexican moccasin, several kinds of Asiatic moccasins, a few rattlers, and some of the tropical lance-head snakes. All of the moccasins except the cottonmouth are known to make use of this light-colored tail-tip; lying coiled and hidden, they wriggle it like a worm or grub, luring small lizards and frogs within striking range! Probably the baby cottonmouth has the same habit, but as yet scientists have not proven this to be the case. Unfortunately, this distinguishing mark soon vanishes as the snake grows older.

The ground color of the cottonmouth may be dull greenish, olive, tan, brown, or rusty, with darker cross-bands. Some specimens, and especially those from the Atlantic drainage, have very distinct cross-bands which are light-edged and which stand out sharply. Others, especially from the Gulf drainage,

are so dark that the cross-bands can hardly be distinguished. Almost all cottonmouths become duller in coloration as they grow older. Old specimens, like the one shown in the inset photograph, may be uniform brown, olive, or black. Cottonmouths inhabiting muddy swamps and rivers sometimes become covered with a silty deposit which alters their coloration. Every 45 days, or thereabouts, the snake sheds the outer layer of its skin, thus removing the mud stains as well. A freshly shed cottonmouth may look quite different from one that is about to shed.

The general shape of the cottonmouth is diagnostic. It is a bulky snake, with a heavy body and a wicked-looking broad head that is much wider than the neck. The head is not only broad, but also has a chunky, squared-off appearance. The tail is relatively short and blunt, not long and keen as in the water snakes. (Once in a while, a water snake loses a part of its tail through some accident, causing it to resemble a cottonmouth in this respect.) A scale, tilted downward over each eye, gives the cottonmouth a sinister, scowling expression.

The cottonmouth reaches a greater size than any of the water snakes. In eastern Georgia I once caught a specimen 69 inches long, and in central Florida Ross Allen caught one a full six feet in length. These are the two largest cottonmouths ever to be captured, and are well above the average in size. However, a length of four and a half to five feet is frequently attained, at least in Florida and states of the Atlantic drainage. In the Mississippi and Gulf drainages, the cottonmouth does not often reach so great a size, although four-footers are not rare. Some of the harmless water snakes occasionally reach five feet or more, but a large part of their length is taken up by the slender tail. Thus, a five-foot cottonmouth is a much heavier reptile than a five-foot water snake.

Of course, if viewed closely, the cottonmouth is easily identified. The pupil of its eye is a vertical, cat-like slit (by day); and there is a small opening, called the pit, on each side of the head between the eye and the nostril. Harmless water snakes have a round pupil and no pit. The enlarged scales or plates under the tail are arranged in a single row in the cottonmouth, while in all the water snakes they are in two rows. In the front of the cottonmouth's upper jaw are two long fangs, each covered by a white sheath of skin. They can swing forward into play, or fold back when not in use. The water snakes have no fangs, although they do have numerous fine, sharp teeth with which they will defend themselves when molested. The bite of a water snake may produce many little cuts which bleed freely, but it is no more dangerous than so many brier scratches; the bite of a cottonmouth, on the other hand, produces intense pain and swelling in a very short while.

One of the most characteristic things about the cottonmouth is its behavior. Although it sometimes lies in bushes overhanging the water, it is more often found resting in a coil on the bank, or on a stump, cypress knee, or pile of soggy debris. When approached, it raises its head and appears to gaze about rather boldly. No harmless water snake has quite this habit of elevating the head and neck. If closely approached, the cottonmouth opens its mouth widely, exposing the white inner lining that occasions the common name. Harmless water snakes never gape when disturbed, but simply slide off into the water. A photograph of a captive cottonmouth at the Reptile Institute shows this curious habit of gaping in threatening fashion.

When annoyed, a cottonmouth also may thrash its tail about to produce a sort of pattering sound. Some harmless land snakes vibrate their tails when disturbed, but the harmless water snakes never do so. Thus a snake, coiled at or near the water's edge, with upraised head and pattering tail, is almost certain to be a cottonmouth.

The cottonmouth is unusually bold for a snake. When approached by a person, it sometimes makes off at once, but frequently it will gape a few times and thrash its tail angrily before seeking to escape. An occasional specimen will stand its ground and cannot be frightened away.

Both the cottonmouth and the water snakes (as well as most other snakes) are provided by nature with two scent glands opening to the surface in the anal region. When actually pinned down or hurt, any snake may discharge the contents of these glands,

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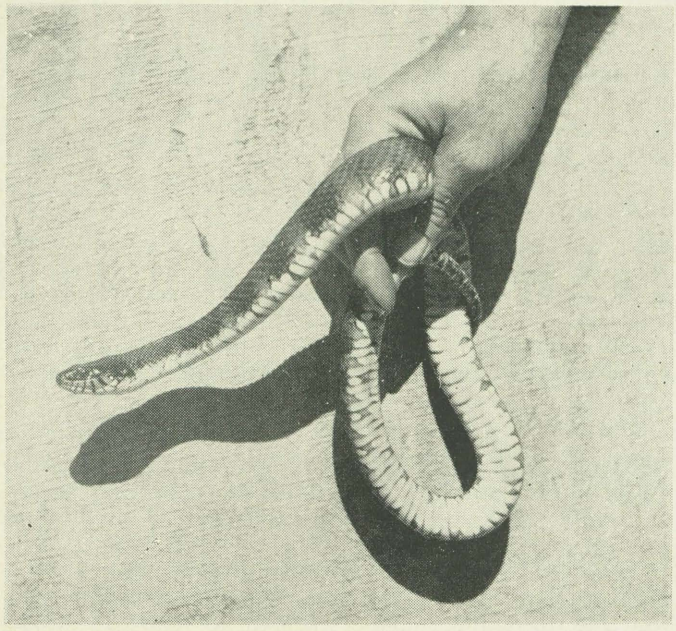
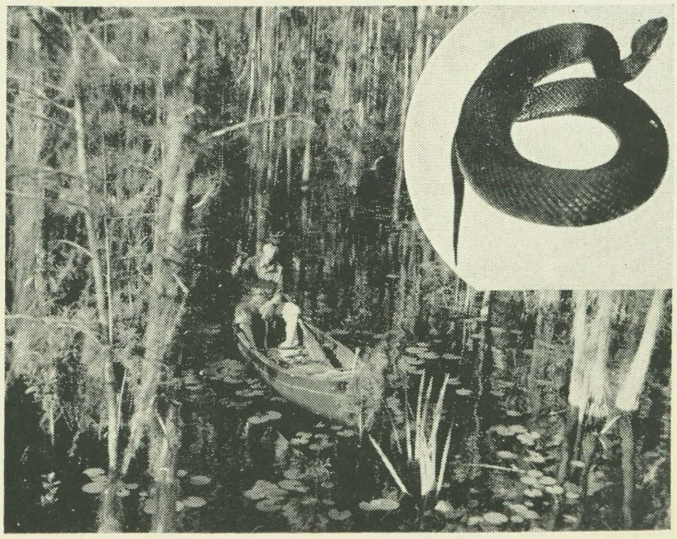
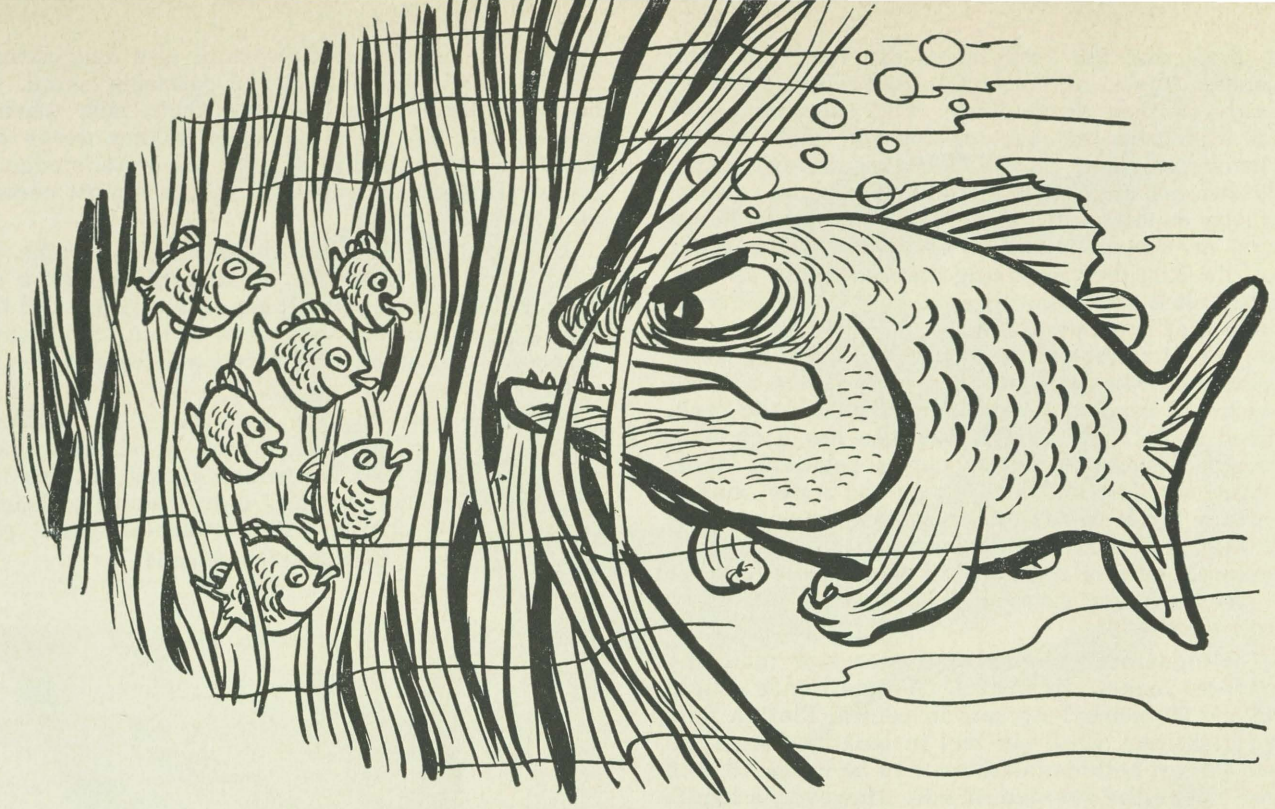


A harmless water snake.



A typical haunt of the cottonmouth. Old specimens (inset) may be uniformly dark.



FISH CONSERVATION FUNDAMENTALS

By R. W. ESCHMEYER

PART FIVE — POPULATION MANIPULATION

WE DON'T LIKE the term "population manipulation" but use it for want of something better. It involves managing fish populations in such ways as to provide optimum numbers of catchable-size fish. It may involve playing predatory game fish species against their prey (the pan fishes), or controlling the less desirable species, preventing overpopulation; and, in some instances, eradicating entire fish populations and starting over by restocking with more desirable species.

Obviously, we can't manipulate fish populations intelligently unless we know what species are present and the relative abundance, size-classes, and rates of growth of these species. We also need to know what species can contribute the most fishing under various amounts of fishing pressure.

We need to know, too, what species are desired by the angler. Often, a fish which is a "weed" species in one area is a highly prized species in some other region. There's the question, too, of the relative "catchability" of a species. For example, brook trout are more catchable than the largemouth bass. We also need to know the individual habitat needs of the various species.

Population manipulation hasn't progressed far, except in a few aspects, because we still don't know enough to handle it intelligently. But it has a big future.

We also don't know enough about the subject to give a brief, concise over-all picture of it. So, the comments here are limited to a few aspects.

THE FARM POND

The farm pond, with largemouth bass and bluegills (other combinations of predators and prey species—or trout alone—are also used), is probably the simplest habitat with which fishery workers deal. Yet, fishery workers disagree rather decidedly on how it should be managed. This disagreement can be attributed mainly to the fact that conditions differ, and that management methods which are successful in one area often don't pan out in another area.

The objective, in the farm pond, is to produce continuing supplies of both catchable-size bass and bluegills in reasonable numbers. This can be done only if the bass keep the bluegill population reduced in numbers (by eating them) to where there's adequate food for the bluegills which survive—and only if enough food to permit rapid growth.

The "balance" between predator and prey is a rather delicate one. Usually, after a few years, the bluegills become overabundant and stunted—regardless of the stocking ratio used at the start. The stunted bluegills make serious inroads on the supply of bass eggs and fry, reducing the future "predator" population effectively. It's a one-day affair, and is unlikely to correct itself. Only about one pond in a thousand gets any kind of management — including nearly enough fishing.

The other extreme-overpopulation and stunting of bass—is much less likely; it can often correct itself because bass can keep their own populations down effectively (when food is in short supply) by eating their own young.

Knowing that the tendency is toward too many bluegills, the pond owner can use various population manipulation "devices" to maintain balance or to restore it. Those which come to mind are:

1. Fish the pond hard and often. Remove all blue-

gills caught, regardless of size, but return a reasonable number of the bass caught.

2. Keep the pond free of aquatic vegetation. The small bluegills find excellent protection in dense weed beds and are less available to the bass.

3. Destroy most of the bluegill beds. A few nests can produce a lot of young. Destruction of most of the beds by mechanical disturbance or chemical poisoning—when the eggs have been laid—will reduce bluegill production.

4. Partial poisoning. Studies on partial "poisoning" with rotenone made at Auburn, Alabama, indicated that, at mid-day, use of rotenone along the margin would take mostly bluegills, few bass. The same procedure, used early or late in the day, would destroy large numbers of bass as well. The fact that small bluegills are inshore in mid-day, when bass are in deeper water, permits destruction of bluegills without serious harm to the bass.

5. Where ponds are seinable, excess bluegills can be removed by seining. Or, they may be removed by trapping.

6. Where conditions permit, the pond can be drained and the desirable numbers of fish can be returned. Or, the population can be removed by use of rotenone. However, the fish are killed by this process and the pond will not provide fishing until new stocks have grown to catchable size.

7. A fellow we had lunch with recently had his own simple answer to the bluegill overpopulation problem in his 1½-acre pond. He bought several hundred dollars' worth of adult bass and hoped to add several hundred more dollars' worth in a few months. This method is effective, but we don't advocate it for general use for obvious reasons. The method is too costly, except in isolated instances on private waters, regardless of effectiveness.

LAKE REHABILITATION

Often—where the fish populations are made up largely of numerous stunted fish or undesirable species—the easiest way to restore good fishing is to drain out the water (if possible), or to exterminate the population by chemical means, and then restocking to start over.

There are limitations, of course. Most waters can't be drained. Use of rotenone is expensive, it rarely results in a complete kill of all fish, and it will kill fish in the outlet stream.

Despite the limitations, rehabilitation has become an important tool. By 1954, the state of Washington, alone had treated 210 lakes (17,783 acres), destroying the fish populations and, by subsequent stocking, created excellent trout fishing where angling was poor prior to rehabilitation.

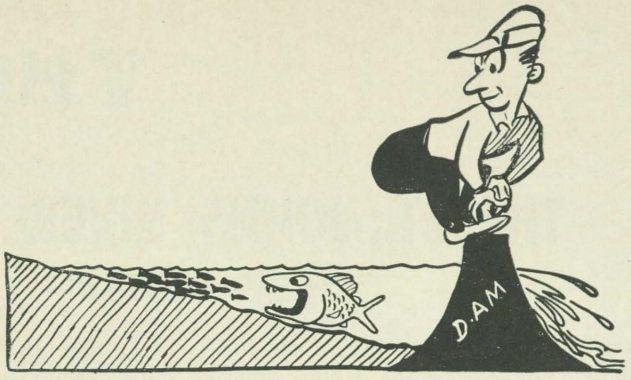
Partial "poisoning" is effective where certain fish concentrate, usually at spawning time. Such fish as adult carp, suckers, and some pan fish species, can be reduced very decidedly by this method.

Rehabilitation of streams has also been tried recently, in a few instances, to reduce the rough fish. In one major attempt, rough fish from downstream soon repopulated the treated areas. Its value in stream management is still not determined.

ROUGH FISH CONTROL

In waters which are well suited to rough fish, control measures often help fishing for the more desirable species. Experience shows that control of rough fish must be substantial and persistent if it is to be effective. Otherwise, recovery to their original abundance is apt to be rapid.

Some years ago big Mattamuskeet Lake in North Carolina was taken over by the U. S. Fish and Wild-



life Service and made into a national wildlife refuge. Carp interfered with the success of the refuge. They became extremely abundant. Much of the food of waterfowl disappeared in Mattamuskeet. The bass and crappie mostly disappeared, too.

A seining area was baited with grain to attract the carp. In 1949, when bait was first used, the take of carp rose to 110,000 pounds. In 1950 it jumped to 360,000 pounds, and in 1951 to 745,000 pounds.

As a result, the water in this shallow 30,000-acre lake became much clearer. Waterfowl food plants increased greatly. Bass and crappie increased quite decidedly. Fishing has improved as a result of the carp control program.

Extensive study in Iowa brought this conclusion from two fisheries workers in an article in the *Transactions* of the American Fisheries Society:

> The Iowa Conservation Commission's policy on rough-fish removal has been based for many years on the theory that these fish are detrimental to and competitive with the more desirable species of fish. Rough-fish control has been vigorously carried on year after year in several Iowa lakes. In these lakes game fish population has been large and angling in general has been good. On the other hand, in several lakes with large populations of rough fish that have not been seined so intensively, game-fish populations have remained at consistently low levels.

There are other examples to demonstrate the importance of vigorous rough fish control on some waters. Such control can be exercised in a number of ways, including use of commercial gear, local "poisoning," and possible innovations in electrical shocking devices.

In some areas the problem is being partially solved by liberalizing regulations, and by creating a greater demand for rough-fish fishing. Some of these fish are excellent fighters; and some, from unpolluted waters have good food qualities. In this connection, two personal experiences come to mind. On more than one occasion persons have commented on the excellent taste of the "walleye" fillets they were eating, not knowing that carp fillets had been substituted. Too, the "fights" which we recall most vividly were with big carp on light tackle. We didn't know that carp

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THE ST. JOHNS RIVER MARSH

By OSCAR G. RAWLS

WHAT WILL become of the upper St. Johns River marsh as a part of the Central and Southern Florida Flood Control Project? What will happen if it is left alone? These are questions which are puzzling sportsmen groups and fish and wildlife interests all over Florida. They apparently believe that there is a choice between (1) the Corps of Engineers' providing water control works for the area with as much provision for fish and wildlife as is consistent with such a program; or (2) leaving the marsh as nature made it. All agree that it is one of a few remaining paradises of black bass, pan fish, alligators, exotic and game birds, and lowland game.

It all sounds rather simple to decide, but is there really a choice? Will the marsh remain a paradise if left as it is, or will the inevitable encroachment of private dikes farther out into the marsh mean that there will soon be no marsh remaining? If trends in marsh diking continue for the next 10 years as they have in the past few, there will remain only a narrow valley for the stream with diked pastures and drainage districts extending riverward to the point where the costs of the enclosing dikes is almost equal to the productive value of the land protected.

The accompanying chart shows the flood plain of upper St. Johns River during a severe flood. The portion of the flood plain that had been diked off in 1945 is shown, as is the additional area surrounded by dikes since that time. The area near the actual stream is all that now remains. Even as this map was prepared a flight over the area showed several draglines throwing up new dikes out into the marsh. As shown on the map, by 1945 about 26 percent of the marsh had been diked, and at present more than 48 percent is surrounded. The accompanying table shows the progression of encroachment into the marsh. If trends mean anything, how much of the marsh will remain by 1965 if things are left as they are?

The concensus of conservation interests appears to be that the land should never have been sold to private owners, that it should have remained in public ownership and remained as nature made it. While that idea is quite sound, the horse has already escaped. The land is in private ownership, and the only present law that will prevent further encroachment into the river valley is the law of dike-building economics. The axiom that the owner can do as he wishes with his own land is hard to get around. The State that sold it to him will have difficulty in taking it back or legislating it back except at his own price, or at least a fair price. On land already developed and diked out into the marsh those prices will run high.

Conservationists might then say, let's buy back this land no matter what it costs because such a fish and wildlife habitat is beyond value. All very true, but where will the money come from? Is there a State agency with funds for that purpose—the Game and Fresh Water Fish Commission perhaps? No, they have only funds for salaries and enforcement programs, not tremendous land purchase projects. Then maybe the Central and Southern Florida Flood Control District could buy it back. No, that agency has no authority to buy lands other than those needed for construction and flowage easements for the Central and Southern Florida Flood Control Project. Thus, they cannot buy lands in St. Johns River marsh unless such lands are needed by the Corps of Engineers. They cannot buy them for conservation purposes only. The U. S. Fish and Wildlife Service, or any other Federal agency for that matter, also apparently cannot buy the lands unless Congress specifically sets the area aside for such purposes and provides funds for the land purchase.

It therefore seems that in order to save any appreciable part of the marsh from the present trend of private encroachment, that the Corps of Engineers' flood control project is the remaining answer.

The flood control plan of the Corps

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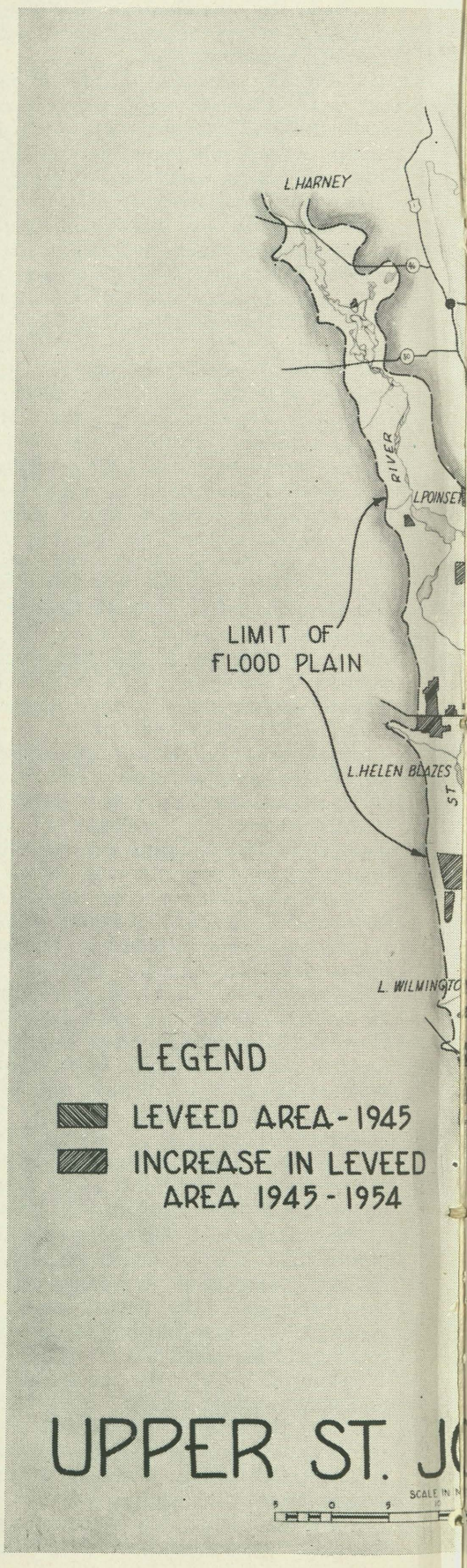
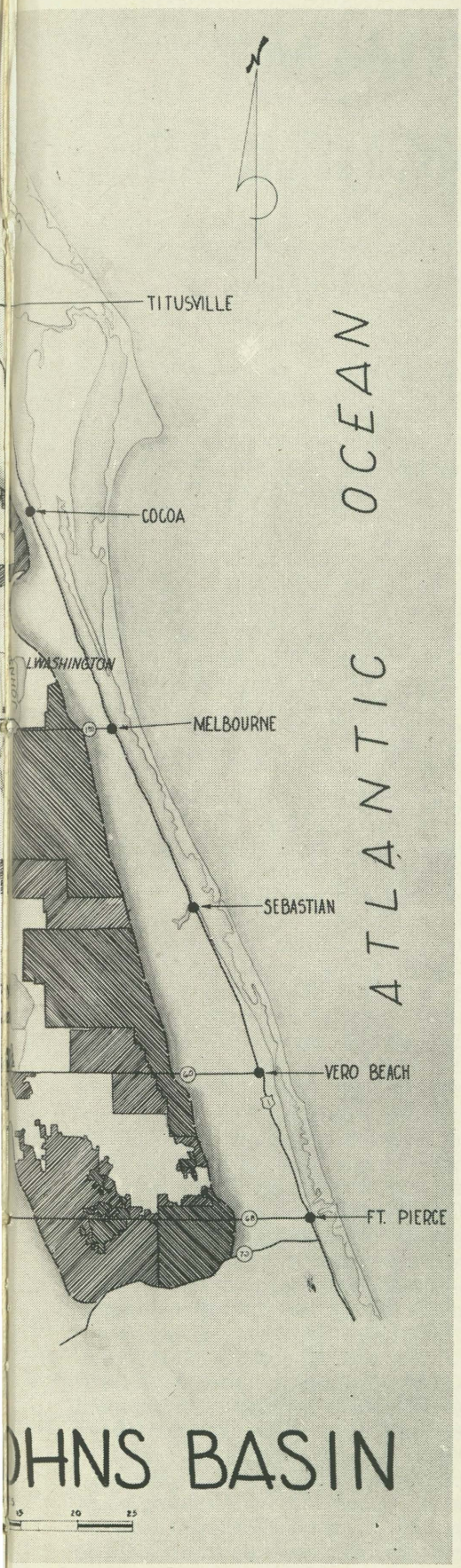


VER CONTROVERSY



IT'S ALL OUR FAULT

By LOU MUSSLER

THERE'S NO doubt that conservationists and sportsmen are fighting a losing battle in their attempts to keep the upper St. Johns River wetlands from going down the drain.

Although conservationists for years have been warning of the seriousness of our wetland destruction, little heed was given. The failure, years ago, to hold in public domain all those wetlands and river marshes so vital for fish and wildlife has been a sore spot with sportsmen for a long time.

The history of how these lands were given away, or sold for a pittance to private ownership, would make interesting reading. Suffice to say, these lands *were* given away or sold. Practically all wetlands and marshes adjacent to our rivers and lakes are now in private control.

Up to the end of World War II, few people were much interested, or seemingly cared less, about wetland encroachment. The few conservationists who dared raise their voices in opposition were dubbed as alarmists. However, the post-war days saw the demands for large real estate developments and housing projects; high agricultural and beef prices caused the owners to enlarge their farms and grazing lands.

Ditching, diking and draining came on a large scale. More agriculture and beef in a nation already piled high with surpluses—so high in fact, the government still doesn't know what to do with it.

Ditching, diking and draining of private lands is paid by the property owners. The cost of huge permanent works is prohibitive, so half-measures in construction techniques are employed. Few of the dikes are really strong enough to withstand more than normal rains. But the Florida rainy season does not always run according to the norm. The average annual rainfall of some 54 inches is not evenly distributed. During the fall rains, it has happened that more than 70 per cent of the annual average fell in less than two months—and with a good wind behind the rain, startling things could happen.

And they did happen. The weak dikes gave way, the farmers and ranchers' lands became inundated. Their pumps could not handle the volume of water to be removed. Their original wetlands, temporarily dried up, became much wetter. Crops were ruined, cattle died of starvation, and were drowned.

So the rancher and farmer howls for "flood control." After all he is being hurt economically. Other farms and ranches up and down the valley are in the same boat. Their owners take up the howl. It soon swells into a roar.

Although he knew of the risks involved in developing low lands, and he took his chances, win or lose, the glitter of the golden dollar tempted him to drain more lands.

Despite the draining, more and more floods occurred. The ability of the newly cultivated area to drain itself of excess water was lessened, because as more and more of the old dumping grounds for this surplus water was dried up and used for farming and grazing the water had no place to go.

En bloc, the people affected sought aid from the Flood Control Districts. The old drainage districts couldn't take this excessive water, so they needed help on a larger scale. And because it seems the aims of past was to adopt policies dictated by individual large landowners and corporate property holders instead of the people as a whole, the local conditions were given the red flag of priority. Federal authorities were called in. Conferences were held, preliminary surveys made. After the flood of 1947 the Corps of Engineers made a hasty, tentative plan. Work was authorized by Congress, funds were appropriated for the Southern portion of the project.

The St. Johns and Kissimmee valley "problems" were to come later.

We are now at "later."

Conservationists, sportsmen, and the large population along the Indian River, alarmed at certain of the 1947 plan's proposal for dumping this excessive water into that river, became

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THOSE CHUMMY CHINCHILLAS

By EDMUND McLAURIN

CURRENTLY, THERE seems to be a rising trend of public interest in commercial raising of chinchillas here in Florida. At the same time, there also seems to be considerable confusion and lack of definite information, plus a mass interest in knowing more about the little animals—their history, uses, their housing and feeding needs, their market value and their adaptability to Florida's climate, to name a few related phases that have prompted questions. In general, there are amicable but marked differences of opinion.

(So controversial have been some expressed opinions that this writer desires to state here and now that he bears nothing but good will for Florida chinchilla breeders and those elsewhere. Any critical statements should be regarded as being of investigative and reportorial nature, not personal viewpoint.)

Totally unaware of the international interest and controversy associated with his kind, and seemingly indifferent to his economic importance, is a small, chummy, round-bodied rodent, somewhat resembling the common squirrel but shorter in body and tail, with an overall length of about 16 inches and a weight of from 18 to 35 ounces at maturity.

As an animal, the chinchilla is a species unto itself, and in no way kin to chinchilla rabbits, so named because of their coloration resemblance to the true chinchilla, though possessing fur differing greatly in quality and value. Genuine chinchilla fur is wonderfully soft, fine and silky, and the finest textured fur to be had. On prime animals it is usually from one to 1½ inches long. The pliable hair is firmly embedded in the skin and stands at right angles to the pelt, rather than at a slant as do most other furs. Harry J. LaDue, fur expert and pelt judge, states that he has examined fifty-year-old chinchilla garments and found it impossible to pull the fur out of the leather.

Strictly herbivorous, chinchillas subsist on a diet rich in alfalfa or timothy hay, carrots, beet tops and commercially-prepared food pellets. A pair can be fed a balanced diet for a full year for from five to seven dollars, breeders declare.

The little animals are clean, practically odorless, docile in captivity and prone to few mortality hazards.

Mated chinchillas usually breed for the first time when from six to twelve months of age, and thereafter have a reproductive life of from eight to twelve years, generally on a monogamous basis although some success has been obtained from polygamous mating of exceptionally fine animals. Statistically, the average young produced is 2.85 per female each year. This figure is based on the one to four babies that may be in each litter.

After a 111 day period of gestation, chinchilla young are born fully furred, with eyes open, each baby weighing approximately 1¼ ounces and possessed of enough strength and curiosity to scamper about their pens within a few hours after birth. They may take solid food the first week and may be weaned entirely in about eight weeks. They attain full size in about eighteen months, and may live fifteen years. About 85% survive to maturity, with the females being slightly larger than the males.

According to figures furnished by the National Chinchilla Breeders of America, Inc., there are now approximately 560,000 domestic chinchillas, representing less than 300,000 breeding females, in turn owned by some nine to ten thousand breeders.

Until 1923, when the late M. F. Chapman imported eleven light rusty brown Lanigera specimens that had been live trapped in the lower levels of the Andes Mountains, the chinchilla was native only to an area comprising most of Peru, the highlands of Bolivia, the northern section of Chile and northwest Argentina.

The South American chinchilla is of a colorful and romantic background. The ancient Incas used chinchilla fur for royal robes long before Spanish explorers invaded their domain and introduced chinchilla fur to the royalty of Europe. Such was the foreign demand, and so heavily were the little animals trapped for their prized fur, that by 1920 the South American countries were forced to slap an embargo on foreign exports to prevent extermination.

However, Chapman's timely, successful and unexplained transfer of his eleven specimens from the extreme cold of the Andes to the climate of southern California gave the present domestic industry its start. Having successfully undergone a reversal of seasonal changes and thriving best in temperatures just above freezing to about eighty degrees, the South American variety is now thoroughly acclimated to living throughout the United States. Today, air conditioning units make for easy control of their living conditions, although some Florida breeders submit their stock to

Florida's natural climate without ill effects. However, most Florida breeders feel that a cool cage temperature makes for better quality fur.

Slow, selective breeding has greatly improved the quality of chinchilla fur above that of Chapman's native animals and the original Lanigeras have now been supplemented with a short-tailed type scientifically known as *Eryonis Brevicaudta,* once the peer of all chinchillas.

For new breeders wishing to enter the industry, established breeders currently sell animals for $600 to $3,000 per pair, with most sellers guaranteeing stock to be fertile, fit for breeding purposes and to litter with a given length of time, and with buyer privilege of seeking free advisory service whenever needed.

Each breeding cage of a reliable dealer's salable stock will have attached a registration certificate, as issued by one of the national associations, attesting to the pedigree and giving it a recorded number that should match the one tattooed inside an animal's ears. No two animals ever bear the same numbers, if of registered stock.

Although incredibly swift in their movements when excited, chinchillas do not burrow nor climb, so cage construction and flooring offer no problem. Pens, therefore, can be kept in a spare room, on an enclosed porch or anywhere cool, dry conditions prevail. General upkeep, breeders say, requires only a few minutes each day.

Most of the commercially-made cages are of heavy rustless wire, about 36x36x18 inches, with alfalfa bins, ¼ pint size water bottle, food bins, a salt block, a pumice stone and a piece of calcium-treated wood—the last two for dental care.

A number of Florida's chinchilla breeders, when questioned about the sale value of chinchilla fur, pointed to the fact that at a chinchilla pelt sale held at the New York Auction Company, June 21, 1954, the first such public auction in more than thirty years, buyers paid up to $175 per pelt. Others were more conservative and estimated the average price as around one hundred dollars per skin. But one breeder, who asked that his name not be mentioned in any published text, admitted that in his opinion the first auction was a flop and very disappointing to him as a breeder.

Because, even among those who were in attendance at the auction, there exists a sliding scale of opinion, this writer made additional contacts with auction officials, with an auctioneer, five buyers and a prominent trade journal editor. The facts compiled are most interesting, and account for the wide variance of opinion among active breeders.

First, a study of the copy of the catalog that was issued listing the auction's offerings, and copies of the sales records, show that a total of 10,600 pelts were offered for possible bids, but there were only nineteen consumer-purchasers, and these bought only 2,760 pelts of the total offered during a sale that closed two and one half hours after the opening bid.

The record shows brisk bidding for the first bundle of pelts put on the block and a paid price of $175 per pelt for the 20-pelt bundle, a purchase that commercially had a lot of free and valuable advertising and publicity connected with it. Significantly, the record shows that the second bundle of pelts brought considerably less, but still a good price—$110 per skin. The third sale brought $100 per skin. These first three purchases, attended by much trade publicity and fanfare, ended the high bidding, the record reflects.

Minutes of the auction next show that the fourth bundle of pelts to be put up for bidding did not get any floor response until the auctioneer had dropped the opening price to $45 per pelt. Succeeding bundles brought even lower bids. Of the 10,600 pelts offered in the prepared catalog, only 2,700 were valuable to consumer-purchasers. Of the remaining number, 4,740 of the pelts were bought back by disappointed breeders in an attempt to bolster a falling market, and the sale ground to a stop when the remaining 3,000 pelts were withdrawn from auction.

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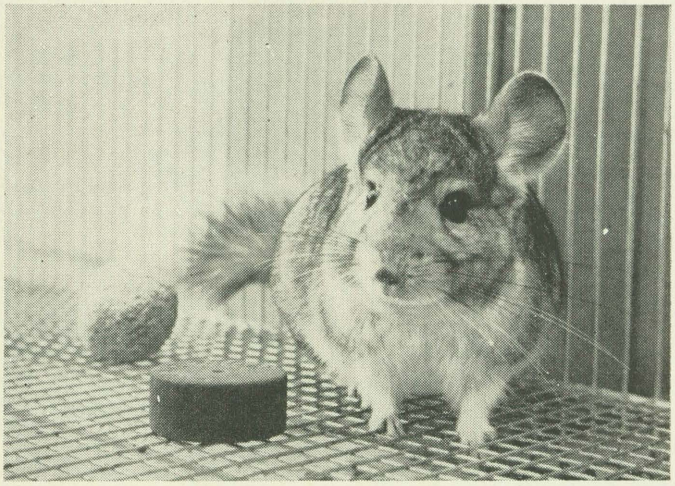
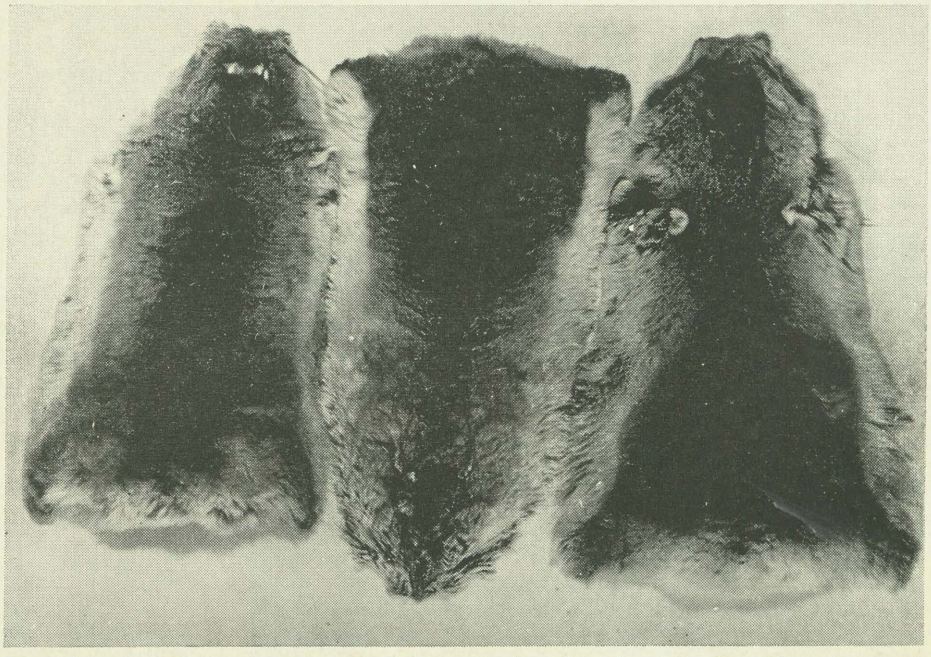


Totally unaware of the international interest associated with his kind, and seemingly indifferent to his economic importance, is the chummy chinchilla, a small round-bodied rodent somewhat resembling the common squirrel, but shorter in body and tail.



There is a great deal of diversity of opinion regarding the price that chinchilla pelts should bring the breeder. Some breeders feel that they should bring from $100 to $175 per pelt but admit that, in most cases, even large breeders cannot supply enough pelts of matching grade to meet garment manufacturing needs. Other raisers speak of a hoped for minimum of fifty dollars or even half that.

With an average of from 135 to 240 pelts being required to make a woman's coat, furriers must examine as many as two thousand skins to get desired coloration match.

In round figures, nineteen consumer-buyers made bona fide purchases for the fur market, paying an average price of $37.77 for each of the 2,700 chinchilla pelts entering the fur manufacturing trade. The fact that the top bundle of pelts brought $175 per skin evidently does not necessarily mean that consumers will pay that price repeatedly, nor even the hoped for $50 to $65 minimum many breeders feel their pelts should bring.

A Florida breeder, who attended the auction as an interested spectator, told this writer that of the first bundle sold, only the top eleven pelts were preferred quality, the others ranging from good to fair. Faced with a scarcity of top grade animals, and cognizant of the greater market value of breeding stock, the breeders themselves doomed the auction by failing to enter the prime pelts needed by the fur manufacturing industry, while at the same time expecting high prices for the good and fair pelts placed on the block, the breeder explained.

As to what prime chinchilla pelts should bring on the fur market, there is a broad band of opinion. Some breeders feel that top quality skins, representing potential breeding stock, should bring them from $100 to $175 per pelt, but admit that, in most cases, even large breeders cannot supply enough pelts of matching grade to meet garment manufacturing needs. Others again speak of a hoped for minimum, not under fifty dollars. A third group simply say that they want to see chinchilla fur sold at a price per pelt that will be on a par with mink—without mentioning the fact that it takes almost twice as many chinchilla pelts as mink to make a comparable sized garment. Naturally, mink raisers do not like either the comparison or the threat of acceptance of chinchilla fur as the fashion and the resulting competition.

On the other hand, furriers pointedly emphasize that chinchilla and mink are two entirely different kinds of fur and that instead of striving for comparable prices, the chinchilla breeders should create their own market by breeding animals to sell for around $12 to $25 per pelt because of the large number of pelts and the labor required to make a salable garment. An ultra-fine, marketable product, they say, is obtained only by careful matching of fur pelts for tone, color and texture and they must necessarily have a considerable stock of pelts to obtain this desired blending. In substantiation is advice from Harry J. LaDue, one of the judges at the first chinchilla pelt show, held in San Francisco, that of some sixty pelts submitted for judging, there were not two pelts among the lot that a furrier could match for leather condition, fur quality or color pattern.

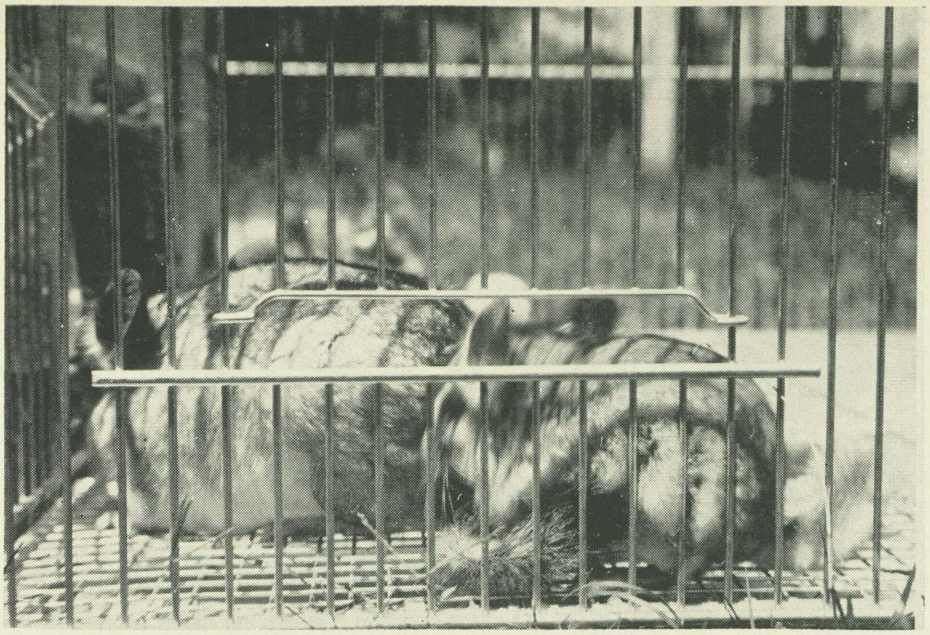
No small factor in the market factor of a finished pelt is its timely selection for harvest, when the fur is at prime stage, a condition determined by blowing into the fur on the back of the neck and along the spine. If the skin is prime, it will be a pale flesh color; if not, it will be blue. After the little animals are killed by hypodermically injecting nembutal or strychnine into or near the heart, the pelts must be carefully removed, with special attention to prevention of damage to the fur from contact with grease, oil and blood. Many fine furs are ruined by mistakes in pelting, and new breeders should get their knowledge and take their initial pelts in team with veterans already skilled in the approved techniques. A common mistake beginners make is to trim removed skins with scissors, instead of using a sharp knife or razor blade, and from the fur side.

But the most serious mistake a new breeder can make is failure to adhere to recommended, scientifically-founded techniques for breeding and herd improvement, with the result that pelts vary widely in quality and value.

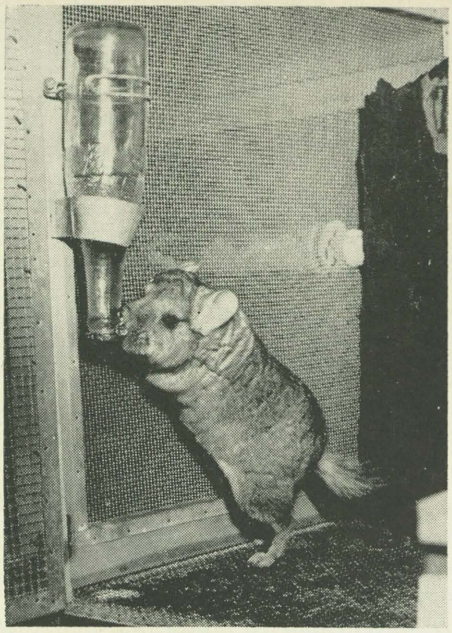
Although there is a shortage of choice chinchilla pelts for garment making, the speculative breeder will find no market for low-grade, hybrid wares. But there is a definite need for more breeders who will start out with top-blooded stock and thereafter conscientiously adhere to established principles of selective breeding without attempting to experiment radically from known genetics, to possibly develop inferior strains and fill pens with animals of little or no market value. A new breeder's anxiety to quickly increase his starting stock numerically, regardless of recommended blood lines, is a paramount reason for failures of chinchilla raising as a business venture and a damaging factor to the chinchilla industry as a whole. To the advantage of all, it is both good breeding practice and financial sagacity to mercifully kill all inferior stock and burn prepared pelts which final inspection shows to be of poor quality.

If chinchilla fur is to know the fashion popularity enjoyed by the Brevicaudata pelts imported around the turn of the century, breeders must also concentrate on obtaining pelts that can be easily matched for color, texture and leather condition by garment makers. With an average of from 135 to 240 pelts being required to make a woman's coat, exclusive furriers, like I. J. Fox of New York, must examine as many as two thousand skins to get desired coloration match. Just obtaining two thousand top quality skins for basic selection is a difficult step, for few breeders can supply that many skins of uniform quality. Breeders, furriers urge, should concentrate on producing prime furs of uniform coloration, texture and eye appeal, that there may be sufficient matching furs and a stable market created.

Aside from strict adherence to scientific breeding procedures, a possible solution to chinchilla fur short-



No large area is needed to raise chinchillas; cages can be located in a spare room, on an enclosed porch or anywhere cool, dry conditions prevail. Most of the commercially-made cages are of heavy rustless wire, about 36x36x18, and may be stacked or kept apart as desired.



A soft drink bottle for drinking water is placed in each cage.

ages being encountered by garment manufacturers might be to eliminate the public auction method of disposing of marketable pelts and substitute therefor the policy of submitting pelts direct to designated wholesale fur houses for appraisal and payment. Another suggested method, advanced by a Florida breeder, would be for a broker to circulate among listed breeders and buy up available top quality pelts, in whatever number can be spared from basic breeding stock, and to pool these acquisitions for bundle sales on a shared profits basis. When contacted relative to the idea, one of the national associations of allied breeders said it has started such a plan for siphoning off small, localized surpluses in breeding stock and bundling the pooled furs for most profitable sale, by pre-matching pelts for quality, color and texture. However, three Florida breeders queried about the present success of the plan, said that they hadn't even heard of it.

Analysts of the fur breeding industry, and editors of trade journals, are also pretty much in agreement that the current trend of selling breeding stock at prices of $600 to $3,000 a pair will have to do an about face. They claim that more realistic pricing of available breeding stock will be to the ultimate advantage of an industry which, admittedly, has no established, stable pelt market, merely the willingness of a few prominent furriers to utilize chinchilla pelts in garment making when obtainable in sufficient quantities to permit matching and manufacturing. Echoing the opinions of other qualified observers is the summation of Cal Morken, Managing Editor of *The American Fur Breeder,* who submitted the following information when contacted by this writer and bombarded with a long list of pertinent questions relative to the chinchilla industry:

"The wearing durability of chinchilla fur is not being argued; however it may not be considered, it is a fact that chinchilla garments were in good demand before the import supply of fur was exhausted. Receiving close attention from the fur world is the opinion of a noted New York designer who predicts a bright future for domestic chinchilla fur.

"The chinchilla offers several advantages for a

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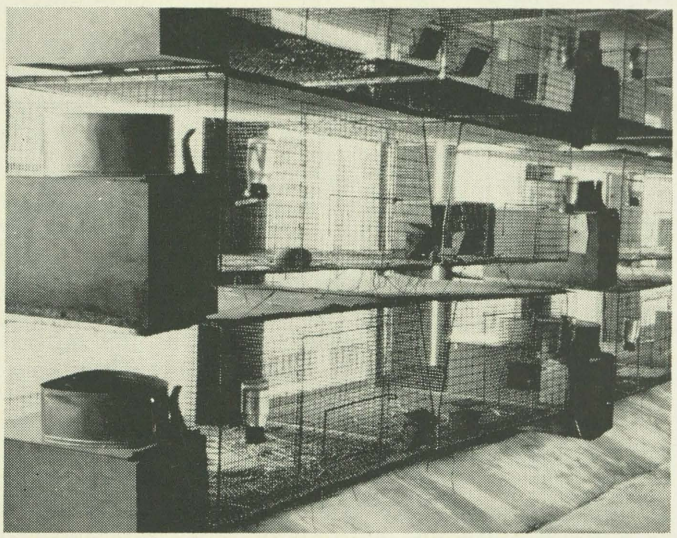
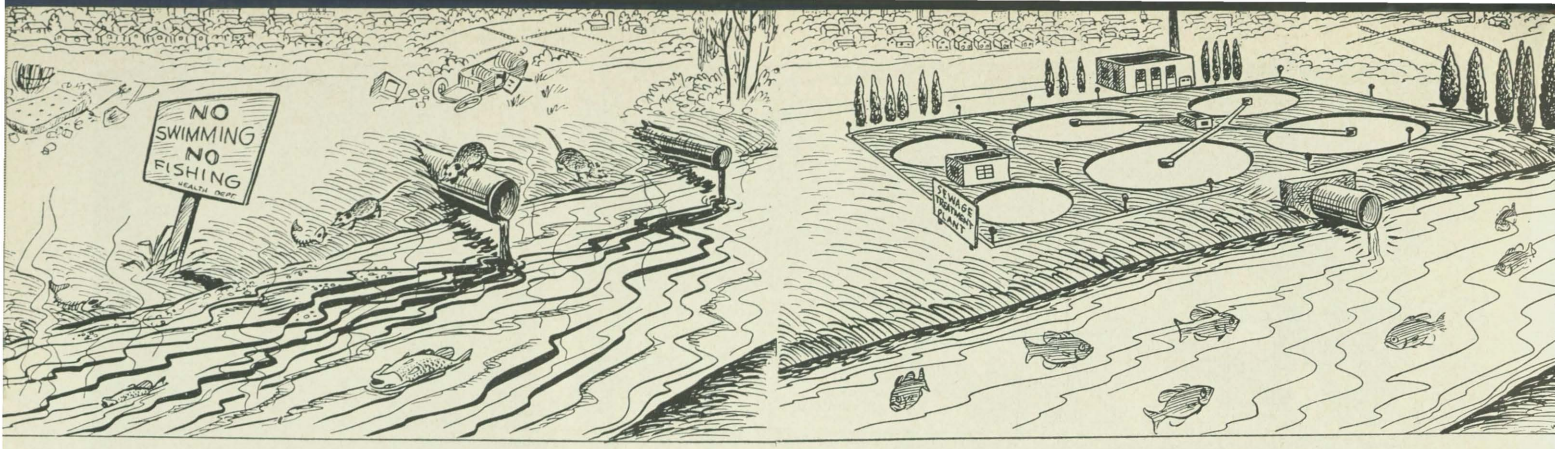


Cages used to house chinchillas vary in details of construction and materials used. In the photo above a bank of all wire cages is shown while those in the lower picture are typical of wood and wire cages favored by many breeders.



SEWAGE AND FISHING

FIFTY YEARS ago, we had little pollution. Most streams were clean. They were teeming with fish. A little sewage found its way into the waters, but our streams and lakes could take care of it.

Now, pollution by municipal sewage is a big and growing problem. Many streams will no longer support desirable kinds of fish because of pollution. The fish which are caught in these waters often aren't fit to eat.

In some polluted waters fishing has been discouraged because of the danger of disease. Of course, swimming in these waters isn't allowed, either. They are really open sewers, and smelly ones at that.

At the turn of the century we had no serious pollution problem. Most people lived on the farm or in small towns. There were few sewer systems. Since then, there has been a big change. Many small towns have grown to be big cities. We have more people now, and more sewer systems. Of the 160 million Americans, over two-third now live in urban communities. Modern sewage systems have been developed to collect the wastes of entire cities and discharge them at concentrated points in our rivers.

There is an added problem. In many places our garbage, once hauled away by the garbage collector, now passes into the sewer, too, because of modern methods of disposing of it through the kitchen sink. We not only have more and more families using our sewer system, but the average family now contributes more sewage than it did even a dozen years ago.

A number of communities have sewage treatment plants. But, many still discharge it into our rivers. Nearly 12,000 communities, with a population of nearly 100 million people, have sewer systems. Of these, more than 8,000, with a population of about 60 million people, discharge untreated or inadequately treated sewage into our streams and lakes.

When the sewage enter the waters, bacteria begin the process of breaking down the wastes. This work by bacteria uses up dissolved oxygen in the water.

Like ourselves, fish must have oxygen. Their gills act in much the same way that our lungs do. They take oxygen into the body. If there isn't enough oxygen, fish suffocate.

Some fish can live with less oxygen than others. The kinds of fish we prefer to catch need considerable oxygen. The carp needs less. He can live in some polluted waters where game and pan fish couldn't survive.

Of course, most of the food organisms of the fish need oxygen, too. Crayfish, minnows, and most insects can't live if the decay by bacteria takes most of the oxygen out of the water.

When the polluted water moves down stream, it gradually becomes purified as the bacteria take care of the polluting wastes. Too, streams can absorb some oxygen from the air, and some is released by the aquatic plants. In a swift-flowing turbulent stream, oxygen replenishment takes place quickly. In slow-moving sluggish water, more time is needed. Here the stream often becomes greasy looking and foul-smelling.

Most waters can take care of a little pollution. But the sewage loads are so big now that in many streams the bacteria can't handle the big load. The streams become smelly, and devoid of desirable fish. You wouldn't want to fish in them even if the fish could live there.

So, most of our towns and cities must now provide sewage treatment which will remove at least enough of the polluting materials that the stream itself can handle the remainder. There are two degrees of treatment: primary and secondary.

In primary treatment, the water usually passes through a screen to catch sticks and other big objects. Then it flows slowly through a "grit chamber," where sand, gravel, and other heavy objects settle. The water then flows into a settling tank where it stands for an hour or more. While the water stands, some solids drop to the bottom as "sludge," others rise to the top as "scum." Then the water between the two layers is drained off. This treatment takes care of about 35 percent of the pollution.

In secondary treatment, the waste water is carried from the settling tanks into "filters" and "activated sludge beds" where bacteria work on the dissolved materials in the water. We can have almost complete removal of polluting substances through these secondary treatment processes.

Does your community have proper sewage treatment? Such treatment does cost money. But, that money is well spent. It's an important contribution to the health of the community and the people living down stream.

You wouldn't dump your garbage in your neighbor's yard. Yet, that's what you are doing to the folks living down stream when your town dumps untreated sewage into the river.

Pollution destroys your fishing. It destroys many other fine things, too. Be sure that your community takes proper care of its sewage. END.

THE REASON IS CRYSTAL CLEAR

By

TOMMY ANDERSON

As is always the case with the fishing fraternity, the grass looks greener on the other side of the state. My wife Bobbie and I love to explore new fishing possibilities. So, after hearing rumors about the fine fishing to be had at Crystal River we packed up our gear a few week-ends ago and took off for the west coast to try some of the angling thrills supposed to be available there.

Fed entirely by a series of springs, the waters are crystal clear, and this river is fast becoming one of the leading play grounds of Florida's Central West Coast. Crystal River is unique in that it abounds in both fresh and salt water fish. It is an ideal week-end anglers' paradise with accommodations ranging from simple fish camps to beautifully appointed villas and hotels.

We arrived on a Thursday evening at Port Paradise Hotel, just south of the town of Crystal River. Friday morning found us up bright and early and off to explore the upper reaches of fresh water around King's Bay, and the many bayous which can be found just off the main river. We started our day's fishing by using spinning rods with such lures as Super-Duper, Spin-A-Diddie, and Mirr-O-Lure. As the river is fed from subterranean springs, the water is crystal clear. It is an ideal spot for the spin fisherman in that the monofilament line is practically invisible even in such clear water.

It wasn't long before several nice bass and quite a few large bream were boated. Much to our surprise, a sailor's choice and a snapper were taken from the same waters. When we returned to the camp for lunch, I inquired as to whether live bait was worth while trying in this vicinity. We were told that a piece of cut mullet with no sinker fished by casting over the grass beds is as productive as any live bait or plug we could use. We decided we would try this for a while that afternoon. A short run with the outboard brought us into one of the small bays where we could see waving below the surface several hundred feet of grass. We anchored the boat and rigged our spinning lines with small hooks. I put a small piece of mullet on each one. We didn't have to wait long before we began to see action. The fish were there all right and soon we were doing battle with a couple of fair sized largemouth bass. The mossbacks kept us busy for another half hour and suddenly, all action stopped.

Being a firm believer in trying everything possible, I suggested that we run back to the dock and pick up some live bait. Bobbie agreed, as the sun was hot and she was ready for a rest. We drove the short way to town and there bought a dozen small but lively shiners.

In our previous exploring we had noticed a couple of canals which had been dug as part of a real estate development and I had figured they would be good bets to try drifting with live bait. The canals appeared to be fairly deep. Another thing in our favor was the fact that, since this was a tidal river, the incoming tide that was soon due would help carry us in the direction we wanted to go. We moved within a short distance on one of the canals and proceeded to fish without the use of a bobber or sinker, letting the shiner swim at will.

The first bass that struck was larger than any of the others we had taken that day. His fight was fast and furious. We caught several smaller ones which we returned unharmed. Everything was going along smoothly when Bobbie had a strike that threatened to pull the rod out of her hands. Being somewhat inexperienced in the fishing game, she let out a whoop that could be heard all over Citrus County. The bass was truly a lunker and for ten minutes, everything went his way. When she finally worked him in close to the boat, her reel suddenly froze and Mr. Bass quickly snapped the line and in a flash was gone.

That ended the fishing for that day, and we returned to our accommodations for a little of the relaxation that is so enjoyable in the peace and quiet of a beautiful Florida sunset.

The resort itself is beautifully located on a point and offers both villa and hotel accommodations. There is a dining room, cocktail lounge, boats for rent, and a very good guide service. Charlie Barnes is the chief

(Continued on Page 47)

CHUMMY CHINCHILLAS

(Continued from Page 31)

domestic breeding industry. Chinchilla fur is naturally luxuriant, silky and lightweight. It cannot be imitated, and it has no competition from foreign or wild fur. Chinchilla fur is rich in tradition, and its romantic background gives it a natural promotion theme.

"It is apparent today that leaders in the chinchilla industry fully realize the need for a sound breeding program and culling of herds in the attainment of a profitable pelt market. They further know that they are in a position to study the successes and errors of the fox and mink industries, and to plan accordingly.

"The chincilla industry is being rebuked by other fur industry people for allowing excessive claims about the fur to be conveyed to the public and to new chinchilla breeders. Like in the formative days of the silver fox and mink ranching industries, the chinchilla breeding industry is being plagued by promoters and gyp artists. In addition, well meaning writers have swamped newspapers and magazines with glowing, get-rich-quick accounts of the chinchilla industry, and ads are being published offering chinchilla breeding stock as a sure means to easy money and retirement. On the other hand, the industry has many serious minded persons who are striving for better quality in breeding and who conduct their business in an ethical manner. This fact should eliminate the idea that the chinchilla industry is merely a playground for 'blue sky' promoters.

"For the present, and until a stable pelt market is established, chinchilla profits ride on the merry-go-round of breeding stock sales, wherein people raise chinchillas to sell them to other people who want to raise chinchillas to sell to other people, in a sort of perpetual circle which will only get straightened out when the chinchilla industry gets its nerve on the roller coaster of the pelt market."

Sincerely attempting to better the lot of the chinchilla industry are national associations, like the National Chinchilla Breeders of America; the Chinchilla Association of America; the Farmers' Chinchilla Cooperative, and certain editors of fur journals. To give breeders opportunities to display their stock and exchange ideas, regional shows are staged at intervals in various sections of the country, particularly at Salt Lake City, Minneapolis, Washington, Detroit, Los Angeles and San Francisco. And, as might be expected, the U. S. Government publishes and distributes a pamphlet (Dept. of Agriculture Leaflet No. 266) on chinchilla raising.

Today's marketable chinchillas, above breeding stock needs, produce relatively few chinchilla coats, for, as previously stated, it is now difficult for a furrier to assemble top grade, matched pelts. He buys only when he can get enough for practical use, or to stock pile; hence, there is no stable pelt market for the vast majority of small breeders. With breeding stock enjoying a high market value, the average chinchilla breeder should not be criticized for being reluctant to kill and pelt his best animals for a speculative pelt market, especially when his own marketable output of top grade, matched-tone furs may be under the minimum number required to make a single garment, even assuming that all pelts taken can be utilized, an industrial rarity. Most breeders strive to build basic stock to a minimum of one hundred animals before harvesting many pelts.

That the chinchilla industry is faced with problems, conscientious chinchilla breeders make no attempt to deny. At the same time, they are also sincerely confident that a profitable pelt market can be created through selective breeding and pooling of ideas. With such a democratic attitude, the raising of those chummy chinchillas for their marketable fur may indeed be bright and profitable. The chinchilla fur market future will be an interesting one to observe.

END.

WOOD DUCK NESTS

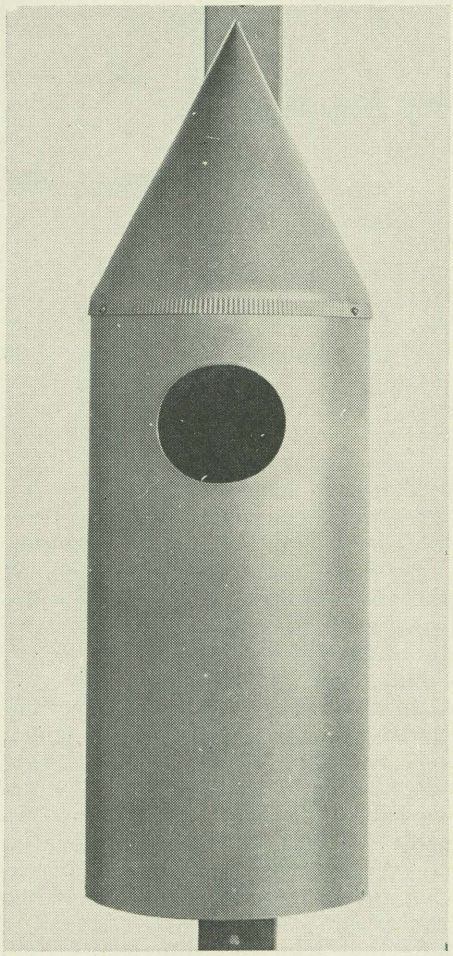
A LOW COST and predator proof housing unit for wood ducks has recently been developed by a Minnesota manufacturing company working with a local office of the U. S. Fish and Wildlife Service and the Izaac Walton League.

More than 100 of the metal houses were set up in testing the product and they have worked out very well. In the interest of conservation, the company is now producing the unit in kit form to be purchased and set up by sportsmen's groups throughout the nation.

Rod Schneider, Assistant Sales Manager for the manufacturer says, "We feel that the mass production of a predator proof house is a major step towards the preservation of the beautiful wood duck. We are proud to be a part of a program that will keep the wood duck as part of our wonderful wildlife. We in Minnesota want the wood duck to survive and I am sure you feel the same about those in Florida."

The kit includes the cone top, house body and wood bottom. Metal screws to fasten the top, nails to fasten the bottom, and screw nails for mounting are included with each kit. A detailed instruction sheet for assembly and mounting is in each kit. Other materials which are required but which are not supplied includes 46 inch pieces of 2x4 lumber, auto body undercoating, and paint. These materials are readily available in every community.

Each kit includes parts for 12 houses packed in one carton. Minimum order is one kit.



The H. Behrens Mfg. Co., Box 178, Winona, Minnesota will furnish additional details upon request.

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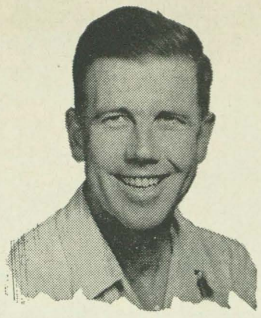
FISHING



By CHUCK SCHILLING

WHILE THIS writer and most of his fishing friends wear glasses to aid a failing eyesight, I have never seen or caught a bass that was so equipped.

It has been proven beyond all shadow of a doubt that bass can distinguish colors much as you and I. They can, also, remember them very well.

In one experiment, the fish were fed on pieces of cut shrimp. After this feeding became routine, some of the pieces of shrimp were dyed red with vegetable coloring, to which hot pepper had been added. After the first feeding, no fish would touch a red piece of shrimp, even after the red pepper had been omitted from the coloring.

LIKE AN EAGLE:

My friend, George Herkomer, runs a fish camp on Lake Tsala Apopka near Hernando, Florida. He has a boat dock with a T head extending 75 ft. into a little pocket of the lake.

George has several pet bass that live in this pocket. They usually hang out in a bed of bonnets about 60 ft. from the T head of the dock. George feeds these pet bass the shiners that die in his live bait tank.

One morning, Herkomer and I, each with a handful of dead minnows, walked to the end of his dock and stood there talking about the pet fish. George pointed out the bonnet bed and said, "They're watching us now, but won't come over 'til I throw up my arm as though tossing a minnow into the water." I listened politely, keeping my eyes on the bonnet bed and the 60 ft. or so of calm water between.

George said, "Now watch." He threw up his arm and, as at a signal, three big bass charged across the calm water, pushing V waves before them. They swam right up to us and waited, clearly visible in the water at our feet.

We took turns tossing minnows high in the air and were delighted to watch the bass scramble for them like puppies after a tossed ball. The bass weighed about five, three, and three pounds, respectively. They could see us well enough at 60 ft. to wait for a signal to come and get it.

'ROUND THE CORNER:

Although most of us will admit that bass can see, a review of our angling habits would indicate that we ignore this important fact in our fishing. I fish quite often with an expert angler who, because he always sits in the bow of my boat, casts around every corner as we come to it, thereby beating me to this most productive of fishing angles. This man loves to cast around corners, thus presenting his lure to an undisturbed shore line before the boat has even made an appearance. He knows bass can see, and he uses this knowledge to his own advantage. What he doesn't know is that if he doesn't start saving some of those corners for me, he's going to be fishing from the front end of someone else's boat.

This same fishing partner loves to fish, as he says, "Where the boat ain't." He likes to follow a shore line just 15 or 20 feet from the edge, making long angled casts ahead of the boat. This procedure makes it harder for the fish to see him, as he is not highlighted against the sky as you are when fishing straight in at right angles. And, of course, his lure covers much more productive water on each cast.

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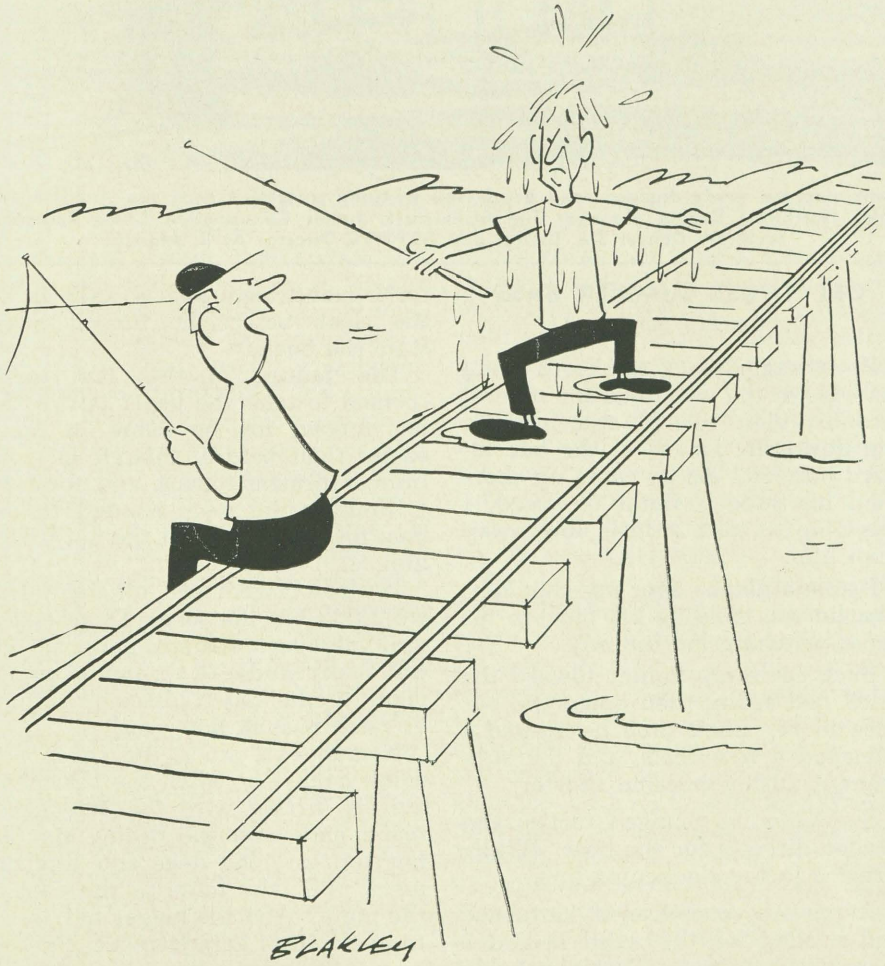
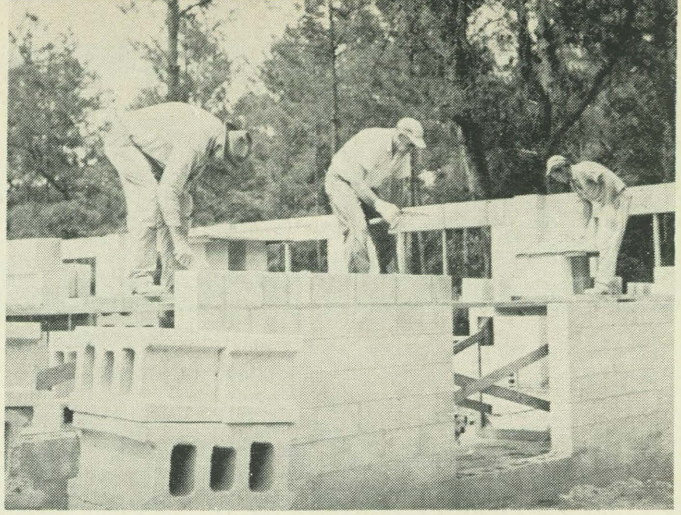


"Where the heck have you been, Slim. I've been getting all sorts of bites."

Plans for the new Junior Conservation camp at Lake Eaton are examined by G&FWFC personnel including, from left to right, Assistant Director O. Earle Frye; Junior Conservation Clubs Executive Secretary Denver Ste. Claire; Director A. B. Aldrich; Central Region Manager David Swindell; Northwest Region Manager Jim Bickerstaff.



Construction on the 100x48-foot mess hall was just getting well underway when this photo was taken.

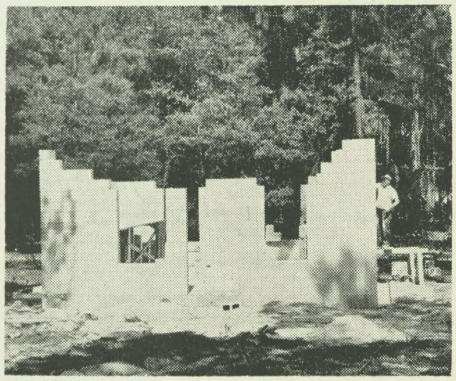
JUNIOR CONSERVATIONIST

(Continued from Page 6)

Mawhinney of the Junior Everglades Conservation at Hialeah.

* * *

The writer sincerely hopes that all of you are accumulating your points earned in Conservation projects. You realize this year the young boy or girl with the largest number

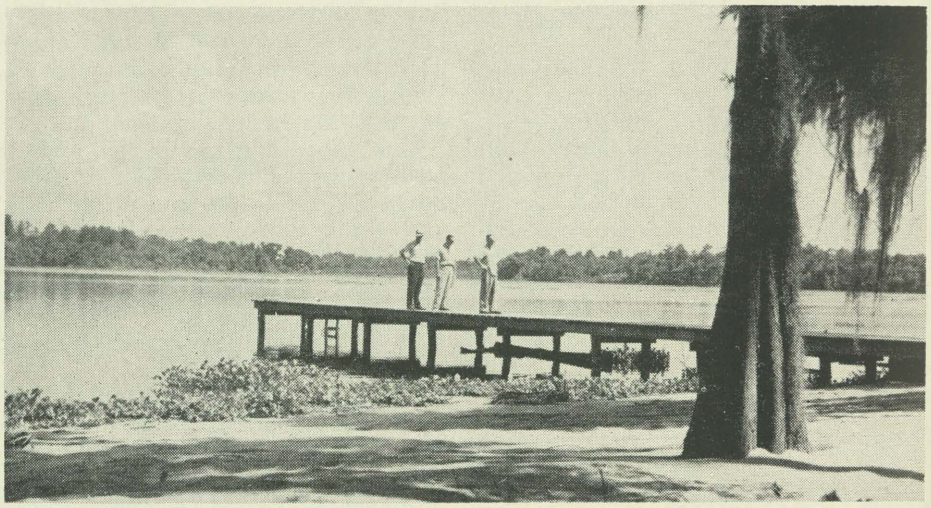


The plans call for 10 cement block cabins such as the one under construction in the photo above. Each cabin will be named after the group donating the money ($850 each) for its construction.

of points earned will be awarded a beautiful trophy. The figure to be used for this trophy is a young man fishing with a fly rod. The necessary lettering will be engraved on a small plaque on the trophy. This, of course, is in addition to the .22 calibre rifle and other prizes to be awarded to the Junior Conservationist of the Year. This will be the first year for the presentation of such a trophy. Also to be awarded at the Fourth Annual Encampment will be a very beautiful cup trophy to be presented to the outstanding Junior Conservation Club of the State.

SEE ALL OF YOU AT CAMP!

END.



Examining the newly dredged sand beach and partially completed dock are, from left to right, Northwest Region Manager Jim Bickerstaff, Junior Conservation Clubs Executive Secretary Denver Ste. Claire; and G&FWFC Director A. B. Aldrich.

GET THOSE SUMMER BASS

(Continued from Page 11)

He struggled back and forth along the edge of the weed bed for several seconds, then turned and made a run down the length of the bar toward our left. As he came up short from his sudden burst of speed, I was able to take a little line away from him.

I stole a glance over my shoulder. Charlie was holding his pipe in his hand, watching me intently.

Back came my fighter toward the weed bed again, then down the bar once more. Each time he turned I managed a few reels, and the subsequent rushes became shorter.

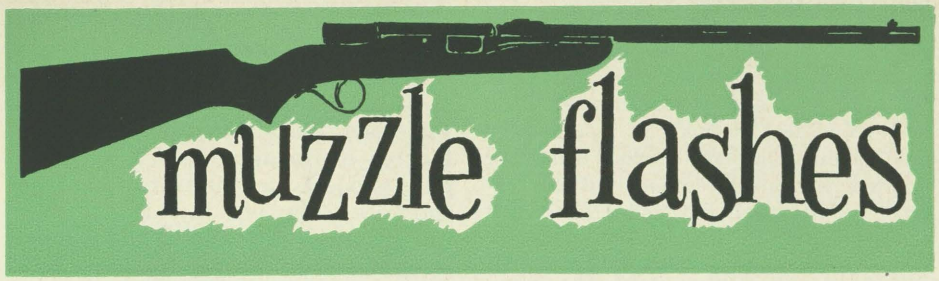
Suddenly he changed tactics and headed directly for the boat. Wildly I reeled in the slackening line.

Apparently encouraged, he turned and headed for the weed bed at a more leisurely pace. That's probably all that saved me from a broken line, for I hadn't been able to take in all the slack before he turned away from the boat.

The failure of this last tactic seemed to take the heart out of the big fellow, for he came in more easily than before, though he continued thrashing back and forth as I brought him near enough to the boat for Charlie to get the net under him.

It was a largemouth, all right. But we didn't eat that one. Today—several years later—it still hangs on the wall of my study—a six-pound monument to the day I discovered how to catch bass in hot weather.

Nowadays I sit in the shade and drink cold beer when the thermometer is flirting with the 100-degree mark, and leave the fishing and the hot sun to "mad dogs and Englishmen." I'll take mine in the cool of the night. And the bigger bass seem to prefer that arrangement, too, because we never have any trouble getting together. END.



By EDMUND McLAURIN

DURING THE last twelve years, and especially since trained, uniformed, badged and respected G&FWFC Wildlife Officers have been responsible for enforcement of the state's game laws, a sensible and logically conducted program of public education has resulted in the average Florida hunter being better informed of his rights and the legal manner in which he may seek and take designated game.

Except for a relatively small group who, as individuals, deliberately violate or attempt to circumvent our state hunting laws, the average sportsman-shooter is also law abiding. It is not against him that laws must be put in the statutes and enforced. As one prominent and retired lawyer once commented, "Laws are made for the exception." It is these exceptions that make laws necessary—preferably good laws, in intent and practical application—statutes that take care of the obstinate "exceptions" while still assuring the constitutional and state rights of good citizens.

Years ago, when many state departments were young and loosely organized, the so-called "game wardens" throughout the state were little more than locally appointed, unorganized, unschooled and ununiformed personalities who patrolled their respective areas asserting the law and their authority rather than commanding public respect as embodiments of the law. Seldom, if ever, were existing game laws explained to non-intentional, technical violators; they were simply enforced in accordance with local viewpoint. Favorable public opinion and better relationship between the hunter and the law officer was seldom developed or even attempted. Contrast that picture with today's duly appointed, trained, uniformed, legally-versed, courteous Wildlife Officers who not only try to exercise good judgment but are expected to do so, that hard-earned public opinion be maintained and flagrant violations be cited on a truly legal and dignified basis.

Today, wide-spread dissemination of information by the Game Commission, the Florida press and other educational channels, especially at hunting season time, makes for a rare instance should a hunter go afield unaware of existing state laws affecting the game he seeks.

But few Florida sportsmen are apparently acquainted with the state game laws applying to between season hunting of varmints, or with the general Florida statutes applying to the carrying or possession of firearms. It is a wise hunter-sportsman who sets up a special "Florida Firearms and Hunting Legislation" file and puts into it every applicable bit of authoritative information that he acquires on the general subject.

As Pete Brown, one of our leading firearms personalities, remarked recently, "Familiarization with existing hunting regulations and state firearms laws is an important step in reducing likely, often unintentional violations. Since I started out to accumulate state gun and hunting laws I have discovered that finding out about the numerous restrictions is not always as simple a matter as it might appear. In many instances your only source will be a library with a copy of state statutes. After locating the law in the volume, you have to interpret it. You will often find that the courts or State Attorney personnel have not interpreted the law as you might expect. Be sure you thoroughly understand all regulations before you begin hunting or target shooting."

Fortunately for Floridians, the G&FWF Commission has taken great pains to see that the meanings of all laws within its jurisdiction are as clearly worded as possible, publicized and given understandable explanation and interpretation by its school-trained field personnel. For example, G&FWFC Wildlife Officers recognize between-season varmint hunting, without license, for such unprotected species as crows, buzzards, raccoon, red and gray fox, skunk, weasel, bobcat, flying squirrel, Cooper's and sharp-shinned hawks (not other species) and the great horned owl, and Florida shooters, under game law grants for exclusive hunting of these varmints, may go afield with rifle, pistol or shotgun for such between-season sport. Naturally, respect of property rights, obtained landowner permission to hunt on private property, and landowner posting of undeveloped land that is closed to such hunting, must be observed, same as during regular hunting season. It is a good idea to always contact your local Wildlife Officer and explain your planned activities, and acquaint landowners with your desires, that misunderstandings be avoided. Frequently both principals can give you some timely tips about where to enjoy the best varmint shooting—and safely.

The jokers in the deck are the general firearms laws affecting Floridians, but not classified as game and fish statutes and not within G&FWF Commission personnel jurisdiction and enforcement.

For example, most Floridians are aware that they cannot carry concealed, in pocket or inside shirt, a pistol or other deadly weapon, but few know what "concealed" means legally or the legal meaning of "manual possession". Shooters are surprised to learn that a pistol can be legally carried in the closed glove compartment of a car, kept concealed at home or in a desk at a place of business, but cannot be placed openly beside you on a car seat, placed under the seat, be attached to the steering wheel or supported in an unhidden holster! . . . There is no mentioned proviso for the pistol tournament competitor or the informal target shooter who wants to take his handgun to and from a place for firing, or whose pistol is of such barrel length or shape that it won't go in a car's glove compartment.

The real joker in the deck, however, is Florida Law 790.05, titled "Penalty for Carrying Pistol or Repeating Rifle Without First Obtaining License," a statute separate and distinct from Concealed Weapon Law 790.01, though having the same closing sentence as to how it affects law enforcement officers. Law 790.05 is an old statute, one that dates back to the last of the 19th Century, but never repealed; still on the books, and enforceable. Unfortunately, the recent state-wide wrangle about new (and now defeated) firearms bills Florida sportsmen thought unneeded, served to focus local—particularly rural—judicial attention on exist-

(Continued on Next Page)

(Continued from Preceding Page)

ing laws. Lately, various county deputy sheriffs and other general law enforcement officers have been accosting target shooters and varmint hunters firing in remote, unposted, uninhabited, safe land areas for technical violations of 790.05 prohibiting, in any county in the state, manual possession of any pistol, Winchester rifle or repeating rifle, though carried openly without attempt or intent of concealment. Technically, the wording of the law does not even permit carrying of repeating type rifles during designated hunting seasons! Doubt the existence of such a law? Here it is, word for word:

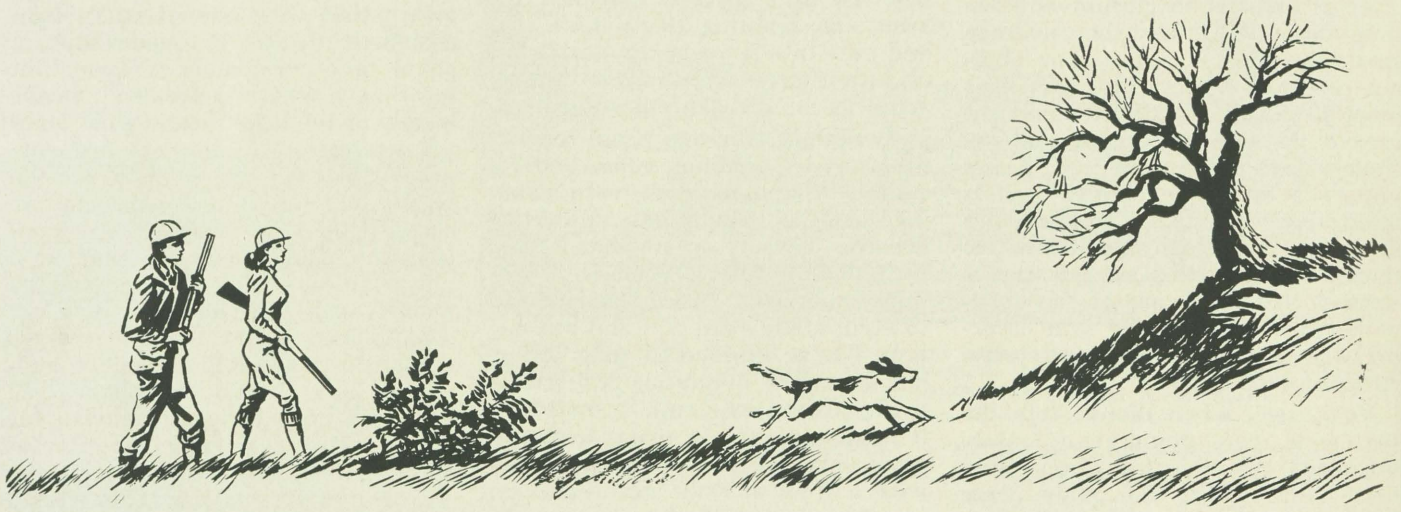
790.05—PENALTY FOR CARRYING PISTOL OR REPEATING RIFLE WITHOUT FIRST OBTAINING LICENSE.

Whoever shall carry around with him, or have in his manual possession, in any county in this state, any pistol, Winchester rifle or other repeating rifle, without having a license from the county commissioners of the respective counties of this state, shall, upon conviction thereof, be punished by fine not exceeding one hundred dollars, or imprisonment in the county jail not exceeding thirty days; provided – this section shall not apply to sheriffs, deputy sheriffs, city or town marshals or their deputies as to carrying of concealed weapons.

According to the best information available, the courts of Florida are interpreting this archaic, but live, law very loosely so far as it applies to sportsmen-hunters and target shooters. However, there is no record of a higher-court test case on this old law, nor has the Supreme Court ever made a decision involving a Florida hunter or target shooter of good citizenship. On the other hand, there have been recent reports of localized citation of the old law by rural JP's, deputy sheriffs and constables, to the embarrassment of otherwise law abiding varmint hunters and informal target shooters.

MUZZLE FLASHES does not propose to argue the pros and cons of Fla. Law 790.05, nor attempt to interpret its legality so far as it applies to sportsmen-hunters and target shooters. The old law is called to the attention of readers, and quoted, only because both the National Rifle Association, Washington, D. C., and the Winchester Repeating Arms Company, New Haven, Conn., are concerned about their thousands of Florida members and product consumers, so far as hunting and target shooting privileges of law abiding Floridians will not be affected by too liberal interpretation and application by over-zealous law enforcement officers. They have asked the Florida gun editors to publicize their interest in knowing of cases affecting the rights of sportsmen.

END.



WHEN FATE LAUGHS

(Continued from Page 16)

they were over the fence and stowing away the corn. They ate toward the trap door and my blood pressure rose to an all-time high. Then the hen decided she had had enough, flew over the fence and walked off to join her lady friend. The gobblers turned and started feeding toward where the hen had left. My blood pressure went down. I could already see them going over and away.

Then Fate burst right out into full laughter. Both gobblers turned, walked over to the trap door and started eating again. For one, the corn inside the trap held a magnetic appeal and in he went. When Fate treats me like that, I'll cooperate 100 per cent. Not waiting one second for the other gobbler which I didn't need, I heaved a husky yank on the rope. Down fell the trap door, away went the other gobbler and distant hens—and I gave a victory yell!

An hour later I met Lou out on the plains far from the trap. He was a happy guy; he had trapped a fine hen! Was I happy, too! I assured him I hadn't heard a single turkey call that morning and climbed into the truck. He started to turn around to head for home.

"Wait a minute, Lou," I said innocently as I could, "I'm afraid I left my light meter in the blind. Drive back, will you, so I can get it."

So Lou drove to the trap. As he got there, he exclaimed, "Hey, look there!" A hen turkey was flying away. Then he spotted the gobbler and turned to me with a big grin.

"Golly—what a beautiful light meter" he laughed, "Let's put it with the other one."

So here I am in my car studio, Lou should be coming back from Okeechobee and I'll soon be making my studies of the turkeys and be on my way home. Then Lou will band and release the turkeys where they should live to a ripe old age.

All such things can happen, you know, when Fate laughs. END.

SMALL POND MANAGEMENT

(Continued from Page 13)

the grouping of various aquatic forms found in Florida lakes. Each step is dependent directly upon the other.

These principles of fish production and the food chain is based upon an old, yet scientifically modern principle. For 2000 years the Chinese have been raising fish in small ponds. In western China, carp and in eastern China, several native species, are reared artificially. In early spring, vendors come up the rivers with boatloads of fry—tiny fish less than an inch long. These are sold by the rice bowl full to the farmers who place them in their ponds. During the summer the ponds are fertilized with human wastes and other organic materials. The fish thrive until late in the season, when all of them are seined out for food. The farmer starts over again in the same pond the same way the following spring. The production is high—more than three times what we can ordinarily expect from our ponds. In Europe, another type of fish production is practiced as an integral part of the agricultural economy. In the Rhone Valley of France the peasants raise grain in a field for a season or two, after which they flood the field to a depth of two to four feet. Carp are then introduced, and the fish thrive upon the food resulting from the grain, stubble, fertilizer, and other organic materials that are present. After a year or two under water, the field is drained, the carp are harvested for food or left to fertilize the soil, and grain is once more planted. These countries are depending upon fish production for food and not for recreation.

Many new ponds, regardless of the method of stocking, do not achieve a satisfactory balance. By balance is meant the proper proportions of the desired species which will result in good fishing. In pond management when bass and bluegills are used, the two groups are balanced against each other in such proportions as to sustain a desirable growth, reproduction and perpetuation of the species. The bass and bluegills are separated on the basis of their food habits as indicated in the food pyramid. Normally a pond will provide good fishing when there are between 3 and 6 pounds of bream to 1 pound of bass. Sometimes ponds never provide good fishing while others become overcrowded with bream after several years.

There are several causes of failure in pond production, some of which are:

1. Competition with wild fishes already present in the pond. This problem can be solved by impounding the water at the proper time, which is in the fall of the year, and by eliminating the wild fishes by poisoning. Pre-impoundment treatment of the stream has already been mentioned.

2. Stocking of the pond with adult fish before the hatchery fish arrive is a common occurrence. The stocking of crappie frequently results in an overcrowded crappie population.

3. Heavy mortality among the hatchery fishes after stocking is also a cause of an unbalanced condition. This is sometimes caused by poor catching and handling of the fingerlings at the hatchery and while they are being delivered to the pond. The loss of bluegills would not be as serious as bass.

4. Removal of bass by fishing before they have spawned in the pond for the first time. This is why we recommend that the pond be closed to fishing from one year after the bass fingerlings have been stocked and they have reproduced.

Weeds must be kept under control if bass are expected to keep the bream controlled. The vegetation offers the bream too much protection from the bass.

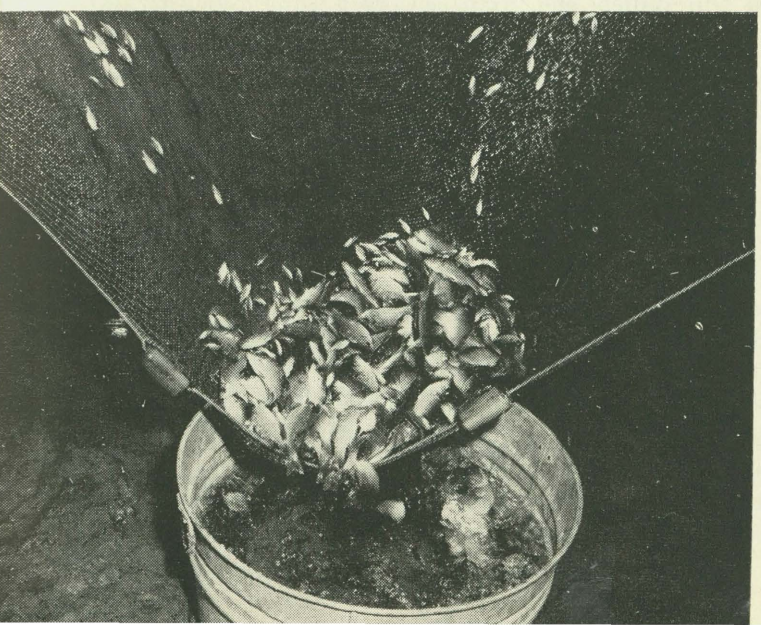
Various chemicals are used to control vegetation in ponds. Common materials utilized for the purpose include 2,4-D Sodium Arsenite, and Copper Sulphate.

In summary, the problems in pond management are many. It has been estimated that at the present time there are in the United States approximately a million and a half farm ponds with a total area of 800,000 acres. During the past 15 years 100 times as many ponds have been built as during the preceding two centuries. These ponds not only furnish good fishing but also provide water for irrigation and livestock use, flood control, prevention of siltation, waterfowl and furbearer habitat, and general recreation.

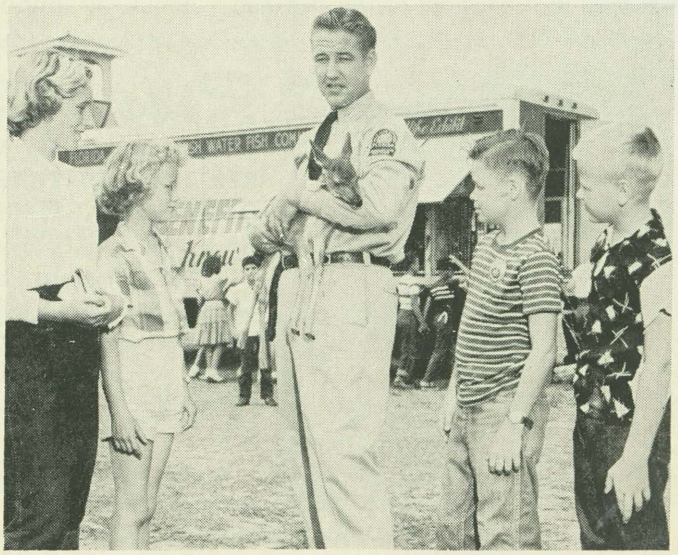
END.

Leaves from tung-oil trees are so poisonous that one and three quarters pounds of foliage will kill a 500-pound steer.

In the fall, from 800 to 1500 bluegills per surface acre are released in fertilized ponds. In unfertilized waters, 400 bluegills per surface acre is considered the proper rate of stocking.



During a two-week tour of the Everglades region, the Game and Fresh Water Fish Commission's traveling wildlife exhibit was viewed by more than 17,000 Florida school children living in that portion of the state, according to Don Carroll, I&E Officer in charge of the trailer. (Ft. Pierce News-Tribune photo.)



CONSERVATION MINUTEMEN

PROLONGED drought in the Everglades section had seen many favorite fishing spots reduced to bone dry flats or to shallow mud holes where thousands of game fish were hopelessly trapped.

When fishing camp operator Verne King noted several thousand bass and bream cornered in one of these rapidly drying water holes near his camp south of Andytown, he headed for the telephone.

King put in a call to Ray Norton, past president of the Anglers Club of Broward County, but learned that his friend was away on a fishing trip. Mrs. Norton, however, learning the nature of the emergency, hurriedly organized a rescue party from members of the Anglers Club and the Junior Anglers Club. Game and Fresh Water Fish Commission officers J. O. Brown and William Mann also joined the group. Buckets, trash cans and seines were assembled and the party headed for the scene.

The trapped fish had been kept alive by a sympathetic contractor who had enlarged the 20x40 foot hole with a dragline and had been maintaining the water level by pumping water into the place. After several days, the contractor had to stop the pump and within an hour the water had dropped eight inches. The fish immediately began showing signs of distress.

Arriving at the site, the conservation minutemen seined the fish, transferred them to buckets and trash cans and transported them 150 feet over the dike where they were released in the canal which runs along the side of U. S. Highway 27. By the time the volunteers gave up from weariness they had given some 18,743 bass and bream a new lease on life.

Efforts of the "Conservation Minutemen" saved many game fish from the tragedy that overtook others that were trapped by rapidly dropping waters.

AJAX, FLORIDA

(Continued from Page 21)

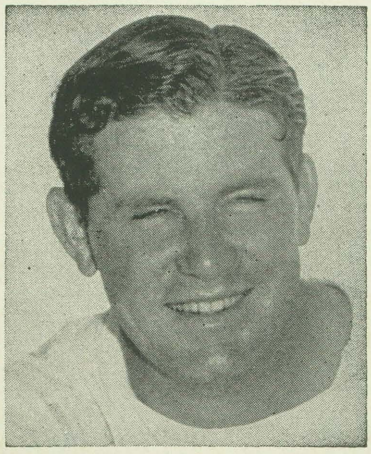
the coil of half-inch nylon to an enormous oak tree on the bank of the lake. He then threaded the hook through the luckless Dominecker, gathered a dozen loops of line in his hand and made a long cast out into the water. The moment the bait hit the water there was a tremendous crash and a catfish about the size of one of these prams the boatmen carry on top their vessels to run errands in, took hold of the hen and away he went. When he came to the end of the line, he gave that oak tree such a shaking that most of the green leaves were torn off and fell to the ground. Back and forth he rushed, rantin' and snortin' and shakin' the tree like a man with the palsy shakes a palm-leaf fan. Finally, everything was quiet for a moment and Les went up to his barn and got a pair of mules and brought them back to the lake. He hitched the mules to the fish line and started them down the road. It was a struggle but in about 30 minutes the mules had landed the catfish on the bank.

The Georgian caught his breath several times and walked around the fish exclaimin', "My aint he a beauty! Aint he a beauty! The biggest and the prettiest catfish I ever saw in my life!"

By that time Les had come up from tying his mules and he surveyed the situation. "You know," he says, "I'm sure glad you caught that fish. If you hadn't, you'd always have thought I was a liar."

That's the way it was, Mister Editor, and it sure was a lesson to Les Keith. It was a close call. They tell me now-a-days that when Les goes to a singing convention he keeps right on singing when the rest of the crowd get to braggin' about this or that or the other thing. He doesn't want to tempt Fate again.

Respectfully,
Plato Winder, Storekeeper



Ross Allen

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Florida Wildlife

THE FLORIDA MAGAZINE FOR ALL SPORTSMEN

12 THRILLING ISSUES **$2.00**

FLORIDA WILDLIFE
FEDERATION NOTES

By DON SOUTHWELL

SOME 75 interested persons attended a recent Director's Meeting in Tarpon Springs. Represented were 18 Sportsmen's Organizations, U. S. Fish and Wildlife Service, and the Game and Fresh Water Fish Commission.

Sam DuBon, Chairman of the Executive Committee reported on accomplishments during the past months. Eric Watson reported on the State Legislative program, and Helen Sullivan gave a report on State Legislation from a National level. A. P. Oliver and Tommy Anderson, of the Fresh Water Fish Committee, reported on activities in their areas, and made certain recommendations to the directors.

H. E. Wallace, Game and Fresh Water Fish Commission and R. H. Macomber, of the U. S. Fish and Wildlife Service brought the Federation up to date on the Upper St. Johns River and Kissimmee River Basin Flood Control plan.

A. D. Aldrich, recently appointed Director of the Game and Fresh Water Fish Commission, was introduced to the Directors of the Federation. Mr. Aldrich, in his talk at the meeting, clearly stated the future policy of the Game Commission in so far as he was concerned.

Dr. H. R. Wilber announced that the Annual Meeting of the Federation will be October 1-2, at the Daytona Plaza Hotel in Daytona Beach, and will precede the annual meeting of the Southeastern States Game Commissioners to be held Oct. 3-4-5 at the same place. The Southeast area includes those States east of the Mississippi River, south of the Ohio River and north of the Eastern Seaboard to include Maryland.

The following clubs were represented at the Tarpon Springs meeting: Sarasota Anglers Club, St. Petersburg Rod and Gun Club, West Coast Rod and Gun Club, Pasco County Fish and Game Club, Lealman Rod and Gun Club, New Smyrna Beach Gun Club, Putnam County Club, Orange County Sportsmen's Association, Volusia Wildlife Association, Brevard County Sportsmen's Association, Lake County Fish and Game Association, Sportsman's Club of Dade County, St. Cloud Sportsmen's Club, Halifax Hunting and Fishing Club, Sportsman's Club of Dade County — Women's and Junior's Division, Florida Tackle and Gun Club, Seminole County Sportsmen's Association, Apopka Sportsmen's Association.

* * *

The new Florida Wildlife Federation Decal featuring one of Florida's most famous assets (a leaping black bass) is being sent to all affiliated Clubs, where its sale will be instrumental in helping to build the Junior Conservation Camp in the Ocala Forest. Mr. J. A. May, of the St. Petersburg Rod and Gun Club, has undertaken the sale of 1000 of the decals, as an example, with the profits going to Denver Ste. Claire for the Youth Project. The Decal may prove so popular that the Federation will sell them to the public at member Tackle Stores and other places of business.

* * *

The Halifax Hunting and Fishing Club of Daytona Beach recently completed a Fishing Contest which brought out much active competition. With only four species of fish eligible, the contest did much to interest members in sportsmenship and conservation. Many fish were released and dozens of black bass were tagged and returned to the St. Johns River. The tags were round monel type with the letters H.H.F.C., and a number, and usually fastened on the dorsal fin of the fish. The contest ended with an all day picnic and fish-fry, and many fine prizes were awarded the winners.

* * *

The Sportsman's Club of Dade County installed J. C. Watts as president at their annual banquet and installation of officers for 1955. Master of ceremonies for the event was Dr. George Terre. J. Fritz Gordon, Dade County Circuit Judge, officiated. Besides Jack Watts, other officers installed were Jim Washington, first vice-president; Dan Jones, second vice-president; W. F. Theobald, Jr., secretary, and W. W. Bowman, treasurer. On the board of directors were Mike DeStefan and Herbert Schaller, for 2 year terms; Roy C. Hill, Bob Morton and Sam DuBon for 1 year, and Lee Cuddy immediate past president.

* * *

The Lake County Fish and Game Association were active in obtaining a breeding ground in the southern part of the Ocala National Forest, located in Lake County. This project has been in the making for several years.

The creation of this area will give Lake County an opportunity to participate in the restocking program of the Game and Fresh Water Fish Commission. END

FISHING

(Continued from Page 35)

EASY ON THE EYES:

I still see anglers fishing with the sun at their backs, and I'll admit this is mighty comfortable on the eyes. But please remember that the bass have eyes, too, and they don't have the blessing of eyelids or sunglasses for protection against the glare. Most of us take the line of least resistance, and the bass do likewise by finding the shady side with the sun at their backs.

Many anglers still cast standing in their boats, making it almost impossible for the fish to miss them. Remembering that bass can see, it's a good bet to paint your boat a neutral shade of blue or green. Bright colors will make it stand out to the fish like a sore thumb.

The wise angler wears fishing clothes of neutral shade, such as, olive drab or sun tan. A white shirt may please that girl at home, but it will, also, advertise your presence on the water long before your lure arrives.

Most expert anglers prefer a slight ripple on the water for best fishing success. Did you think the ripple makes the fish bite better? Not at all. It just makes it harder for the fish to see you.

Don't forget that bass can see, and they spend most of their time watching. END.

MEADIUM DONE WILDLIFE RECIPES

By ELENA K. MEAD

WE'D ALWAYS figured that dressing a fish came naturally to anyone smart enough to catch one until we saw a fellow angler mutilating a beautiful trout he'd caught the other evening.

"Confidentially," was his overstatement as he continued to hack the beautiful white flesh into unrecognizable form, "I don't know how to dress a fish right—but I've been fishing so many years I'd be embarrassed to admit it to anyone now."

We're used to anonymity, so we murmured something in reply and continued to watch, fascinated, while he completed the carnage.

"When my wife's along she usually does this chore," he confided, "or we just give 'em away."

And right there it dawned on us that there may be a lot of guys—and gals, too—who either have five thumbs on each hand—or worse yet—just don't have the "know-how" for dressing their catches, but would rather die than admit it.

So this month's column we are dedicating to these mumble-thumbs who can now sneak this column into a quiet corner and study it to their heart's content.

We'll keep the instructions as simple as possible. Likewise the equipment. You'll need: A good sharp knife with a pointed blade, a fish scaler—and possibly a pair of pliers.

Your "victims" will fall roughly into two classes—skin fish and scale fish. Very large catches, of course, even though scale, you simply skin—thereby dispensing with scales and skin at one and the same time.

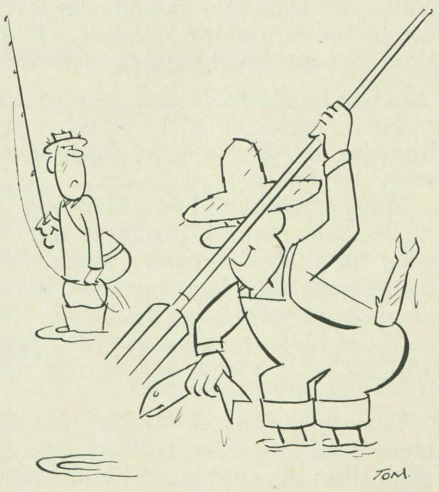
TO SCALE A FISH

First of all, fish should be cleaned as soon as possible after being caught. Make an incision in the underside of the fish from the gills, half-way down the belly, and remove the insides. Also carefully remove the thin dark membrane lining the cavity, for if it's left in, it's apt to impart a bitter flavor to the whole fish.

Now grasp the fish firmly by the head, and with your fish-scaler (Grandpa used to say, "You can't beat a curry-comb for scaling a fish!") work upward toward the head from the tail in short quick strokes. You'll soon have all the scales off. Turn fish and repeat process.

We've seen some folks employ pliers effectively because they simply couldn't seem to hold on to their slippery piscatorial prizes otherwise, clamping hold of the tail firmly with one hand and ripping the scales off with the other.

What a lot of folks don't know—even the old-timers—is that a fish scales much easier if submerged in hot water for a few seconds before you begin the process.



Once the scales are off, cut a narrow strip along the backbone and remove the dorsal fin. If you want to cook the fish whole, remove the other fins (anal and pectoral) and the eyes. Few people like the fish served this way, preferring, instead, to have it boned and cut in serving-sized pieces, head and tail removed.

TO SKIN A FISH

A fish can be skinned either before or after it is boned. If before, then make a shallow incision down center of back, remove fins, cut through skin just back of gills, taking care not to cut too deeply. Make another incision the length of the fish's belly, then, starting at the head, peel the skin back carefully, taking pains not to tear the flesh. Here again, the pliers can be put to good use. You'll find the skin comes off much easier if you skin from head backward toward tail.

When you get a little more expert, you'll find you can skin a fish AFTER it is boned by laying fish, skin-side down, on a board or table, pressing rather firmly with the palm of one hand while you cut the skin away underneath with your knife. At first, you'll have a tendency to cut into the flesh, but a little practice will remedy this.

TO BONE A FISH

"Boning" a fish is removing the main backbone and attached ribs, leaving firm, free pieces for cooking your favorite way.

To do this, after fish is scaled and/or skinned, lay it on its side, with belly toward you. With the sharp knife, cut lengthwise of fish, feeling the bone with your knife as you cut from head toward tail, slicing with even strokes.

Turn fish over and repeat the procedure. At first you'll leave an awful lot of fish on the bones, but again you'll find that practice makes perfect and in a little while you'll be quite adept.

TO FILLET A FISH

The word "fillet" when applied to fish has been kicked around a lot until it has almost lost its original meaning. Most of us think of "boning" as filleting, but fillet in French, from which we have borrowed the word, means literally "strings", so what we now refer to as "fish fingers" is more properly fish fillets.

Fillets, therefore, can be made from even small fish, by cutting strips from head to tail. If the fish is long, the fillets can be cut to suit the individual's taste.

Incidentally, the French also make something from fish strips which

they call "turbans." They roll these long pieces up like a cinnamon roll, secure with wooden skewers or round toothpicks, dip in batter or egg and crumbs and fry in deep fat.

FISH STEAKS

For the real big fish, the proper way to cut them is in steaks. Remove scales by skinning fish; dress as directed; then slice fish into pieces at least an inch thick from back to belly for broiling or baking.

TO KEEP FISH

Properly, fish shouldn't be kept—it should be eaten. But here are a few hints that'll help if you catch too many for immediate consumption.

First, don't handle your fish any more than you can help. Wash only once after it is dressed and DO NOT soak it in water, salted or otherwise for water extracts the delicious juices and detracts from the full flavor.

Wipe fish dry and wrap in a cloth that has been sprinkled lightly with salt—and keep it NEAR ice but never ON ice. Ice should never touch the flesh of fish, for it will soften it and injure the flavor.

We can only suggest to the angler who wants to be as proud of his ability to dress fish as he is to catch them that he employ the same interest and enthusiasm with his knife and scaler as he does with his rod and reel and in a very little while he'll find his efforts will pay off.

END.

FISH CONSERVATION FUNDAMENTALS

(Continued from Page 25)

weren't fit to eat or fit to catch until we left home and brushed up against "sophistication"!

WATER LEVEL FLUCTUATION

For many years fishery workers and sportsmen believed that a permanent water level was essential to good fishing. We now know that fluctuating levels, properly manipulated, can greatly benefit angling by influencing the fish population favorably.

To cite a single example, a biologist of the Illinois Natural History Survey experimented with summer drawdown on Ridge Lake in Illinois. He found that extensive late-summer drawdown keeps the abundance of small bluegills under control. Large numbers of them are eliminated by stranding as the water recedes or by being eaten more readily by bass when they become exposed and concentrated in a smaller area. This results in increased success of bass spawning the following spring when the lake approaches its normal area again.

PROVIDING FORAGE

To have reasonable supplies of catchable-size fish, all steps in the food chain must be well represented. Fishing can sometimes be improved decidedly by finding the weak link in the chain and strengthening it.

In one such case, a southern reservoir of about two thousand acres had very poor fishing. Sampling in a bay of several acres produced a few catchable-length, but thin, bass and some numbers of badly stunted bluegills. Because of extensive winter drawdown, there was little insect life on the bottom. The only available basic food was the plankton (microscopic plants and animals). This food in the amounts present would raise the bluegills and young bass to sizes of a few inches; thereafter, they needed bigger food organisms. The big bass had little fish as food. But the stunted bluegills tended to take advantage of the very shallow water. The most readily available food for big bass was little bass, and the supply of these was limited.

Gizzard shad, plankton-eaters, were introduced. After they were established a bay was sampled again. Now, there were more big bass and they were in better condition. Young-of-the-year bass were well represented, too; many had survived because predation on them had lessened. There were many young-of-the-year shad, just the right size to serve as food for the big bass. As expected, there were also numerous bluegills as stunted as ever.

The game fish population had changed decidedly and fishing had improved. The weakest link in the food chain had been strengthened. Perhaps we should add that there are places where shad should not be planted; this should not be construed as an endorsement for the indiscriminate introduction of these fish.

IN GENERAL

This is admittedly an unsatisfactory discussion of population manipulation. But, it does indicate clearly, we hope, that this management tool has a big future. In general, we're still too short on factual information to apply it effectively.

As may have been observed, it isn't easy, at times, to draw the line between habitat improvement and population manipulation. But, the point is of academic interest only.

In the past our efforts have been aimed mainly at managing fishing by placing various and sundry restrictions on the angler. Some of these are needed. However, prior consideration should be given to managing the fish populations themselves. On many waters the angling affects the actual fish populations only to a limited degree. END.

FIELD TRIALS PLANNED

THE Everglades Field Trial Association and the Piney Woods Field Trial Association held a joint meeting at Punta Gorda on May 15th. Serving as hosts for the meeting, members of the Charlotte County Sportsmen's Club prepared fried fish, swamp cabbage, and watermelon for the 60 guests who attended the session.

The purpose of the meeting was to discuss plans for future field trials. An announcement was made concerning plans for a field trial to be held this year at Lake City. This is the first time a trial has been scheduled for the Lake City area.

A number of members brought their dogs with them to the meeting which was held in the field on the Cecil M. Webb Management Area. Pigeons were released and handlers were given the opportunity to demonstrate pointing and retrieving abilities of their dogs. The dogs were kept leashed during the demonstrations.

Standing, left to right, Paul Brinson, President, Everglades Field Trials Association; Charles Cerny, President, Charlotte County Sportsmen's Club; Lester Alford, President, Piney Woods Field Trial Association. Kneeling, Fred Stanberry, Regional Manager, Everglades Region; A. D. Aldrich, Director; and O. Earle Frye, Assistant Director, Game & Fresh Water Fish Commission.

DEADLY COTTONMOUTH OR HARMLESS SNAKE

(Continued from Page 23)

producing an aroma which is unpleasant although not especially unbearable. The musk of the water snakes is simply foul-smelling, but that of the cottonmouth is sharp and pungent, unlike any other odor encountered in nature. It should be emphasized, however, that snakes of any kind give off their aroma only when actually touched or hurt; at other times they have no scent that human beings can detect. In spite of the contentions of some people, it is impossible to locate a cottonmouth or a rattler by its odor. Only after the snake has been found and pinned down does it give off a scent. Even keen-nosed hunting dogs often cannot spot a snake that is lying quietly; I once watched a whole pack of beagles sniff their way past a coiled copperhead which fortunately made no effort to strike.

Between 1935 and 1940 I spent a great deal of time studying reptiles and other wildlife in a section of Georgia where cottonmouths were abundant. Although not especially hunting for these snakes, I caught an average of about 400 each year. Among all these cottonmouths, only one was ever observed to make an unprovoked attack even though avenues of escape were open to it. On this particular occasion, a friend and I were hunting reptiles along the densely wooded bank of a small stream. On the opposite bank we spied a cottonmouth of perhaps a yard in length, basking on some cypress roots. The snake was separated from us by a steep eight-foot bank overgrown with bamboo-brier and poison-ivy, and by a sluggish stream about twelve feet wide and four feet deep. Having already collected many cottonmouths from the area, we were preparing to leave this one undisturbed, when it shook its tail angrily for a moment and then lunged open-mouthed in our direction. Its strike carried it into the stream, where it floated with uplifted head. Piqued by such belligerency, I seized a stick and scrambled down the bank into the stream. To my surprise the cottonmouth swam to meet me. I waved the stick over its head; it did not strike at it until touched on the forward part of the body. It imbedded its fangs in the wood for a moment and then swam toward my legs. With the stick I pitched the snake onto the bank and, wading across, pinned it to the ground. Immediately the moccasin began a series of violent contortions, voiding the contents of the scent glands in every direction. Twisting out from under the stick, it dived into the cavities beneath the roots upon which it had originally been basking.

Wherever the cottonmouth is found, there too are found some of the harmless water snakes, one of which is shown in an accompanying photograph. Many of the water snakes have a brightly colored under-surface. In some kinds it may be uniform yellow, orange, or red; in others it may be yellow or white with sharply defined spots of black or red. In contrast, the belly of the cottonmouth may be mottled with dark spots or blotches, or else uniformly black; it is never any plain light shade, nor does it bear any really bright red, orange, or yellow. Some of the water snakes are marked with a row of dark spots on the back and a smaller row on each side; in the cottonmouth, the darker markings are in the form of bands most of which cross the body.

Although the water snakes will fight when cornered, they are by nature timid. When approached, they will dive into the water and swim away. The brown water snake, one of the largest of its kind, has the habit of sleeping, half concealed, on branches or logs overhanging the water. Sometimes it doesn't awaken until a fisherman's boat drifts under it; then, suddenly frightened, it dives —right into the boat. The fisherman, also suddenly frightened, may likewise dive, right out of the boat. However, the best thing to do in such a case is to remain calm, and flip the reptile over the gunwale with an oar or paddle.

Study of the accompanying photographs should enable the sportsman to identify the cottonmouth. Readers who saved their back copies of *Florida Wildlife* might wish to consult the issue of September, 1952, in which Ross Allen and I described and portrayed several of the harmless water snakes; the issue of August, 1950, in which we discussed the habits of the cottonmouth; and the issue of February, 1950, in which Ross told how outdoorsmen might avoid being bitten by venomous snakes. END.

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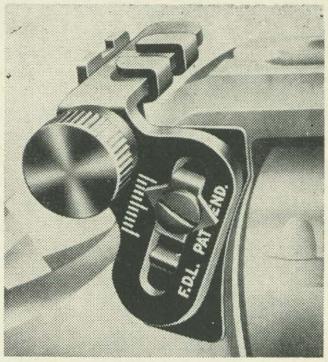
FLORIDA WILDLIFE FIELD TESTS AND TELLS



HANDGUNS made primarily for law enforcement-defense purposes, and popularly priced stock models, as found in the Smith & Wesson Regulation Police revolver, the Colt Military and Police, the S&W .45 cal. 1950 Army, the Colt Police Positive and Official Police revolvers, the S&W .44 Military and similar weapons, do not have the Patridge style, adjustable rear sights that are found on the various target model handguns.

Instead, the rear sight is usually a notch cut in the top of the rear frame, and quite accurate for the handgun aiming associated with a large target and fast, defensive action, but not at all suited to success in tournament target shooting, wherein handgun sights have to be adjusted to precision and individual eyesight. Heretofore, most owners of defense-style weapons have had to acquire special target models to obtain fine-line sight adjustment and the close grouping of shots needed to win in match competition.

Now, Alonzo F. Gaidos, a pistol shooter connected with Firearms Development Laboratories, P. O. Box 25, Duarte, California, has invented a precision, micrometer click, Patridge-style revolver sight that can be attached to the sideframe of any S&W revolver, and similar weapons, using only a screwdriver for attachment or removal. Given the trade name "Wondersight," the aiming aid can be attached and used for serious target shooting, and removed when the handgun is to be given the rugged handling common to a defense weapon. It can be attached or removed in a jiffy.

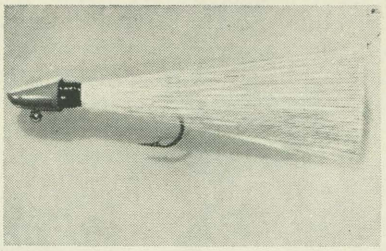
Attachment is effected by simply drilling and tapping a small hole in the side of the revolver frame, using a No. 47 drill and a No. 3-48 plug tap; thereafter, one screw controls installation or removal.

The sight's windage knob gives one-minute click micrometer windage adjustments, with plenty of latitude for either right or left movement. To start, align the rear sight leaf with the sighting groove cut in the revolver frame. From that point, adjust by test firing to individual eyesight requirements.

The accessory does not disfigure or mutilate a handgun in any manner.

Its inventor has been connected with the Ordnance Department since 1927, has designed and developed many items of ordnance for military forces in the field and has had years of experience as a target shooter. The "Wondersight," therefore, was designed to fill an existing need, not as another marketable shooting game gadget. FWFT&T feels that the new sight has very logical application on the target range and opens up a new field of shooting activity for owners of defense-style revolvers.

Price of the "Wondersight" is $4.95, postpaid, direct from Firearms Development Laboratories.



WHEN Florida game fish flatly refuse—as they often do in unexplained quirks of temperment—to evince any interest in live baits or in plugs, they will frequently do an about-face and strike savagely at a trolled or cast jig. Among successful Florida fishermen, especially those who seek the salt water species, a nylon or feather jig rates high as a production lure.

In the Floreo, made of nylon and secreting a murderously sharp hook, the Florida angler has a nicely balanced jig that blossoms like a flower when cast, retrieved a bit and then suddenly given slack line. The hook always rides in an upright position and consequently does not snag like a conventional lure when worked close to the bottom or through underwater growth.

The flowering Floreo is the brain-child of Everett Williams, St. Petersburg, who makes the baits in two solid colors, white and yellow—on the days he is not out fishing with his own lures!—in three sizes and weights.

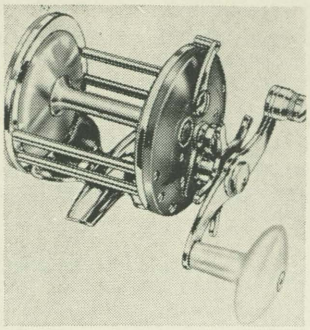
The Floreo is a good fish catcher in waters that may vary from three feet shallows to holes of fifty-foot depth. In using the Floreo, work the lure slowly along the bottom in a series of short, provocative hops.

When casting from a drifting boat, one of the most productive of fishing methods, cast the lure from a sitting or inconspicuous low position in the boat, and allow the Floreo to settle to the bottom, a sinking action that requires about a second for each foot of water depth. The timing can be given almost clock-like accuracy if the angler will say the words "one hundred," "two hundred," "three hundred," and so on, for each second of sinking action desired. (Try saying the words aloud in a reasonably fast voice after you finish reading this text. You will find that the addition of the word "hundred" to each number will require approximately one second total time for the two word combinations.)

When the Floreo has reached desired depth, take a couple of turns on the reel handle, with just enough slack line to cause the nylon lure to head upward. Immediately raise the rod tip in a smooth, easy motion to take any remaining slack out of the line and jump the lure toward the surface, and, without a moment's delay, again lower the rod tip to horizontal position. The sudden release of line tension lets the lure's weighted head make a polite bow while the nylon skirt blooms and spreads attractively. Allow 3 to 8 seconds for this bowing-head and blooming-skirt action, and then take two or three turns on the reel handle and repeat the sequence.

The Floreo works best on 9-12 lb. test nylon casting lines and 6 lb. test spinning lines, on light to medium weight reels.

You'll like the Floreo. Look for it where you buy your tackle. Fifty, sixty and seventy cents, according to the size selected.



HERE in Florida where 8,426 miles of tidal bays, bayous and similar waters make up our coast lines, and where no inland residential area is too far distant for frequent taking of salt water fishing trips, a strong, but lightweight, all-purpose fishing reel is much desired by anglers—and especially a model that will successfully handle the new monofilament lines.

In the new Ocean City "Monoline" #950, or its baby brother, the #949, an angler will find a reel that will not only handle monofilament line without sideplate snag, but one that can be used for both fresh and salt water fishing under a wide variety of conditions.

The "Monoline's" specially designed spool flanges, together with the lightweight line spool and close fitting tolerances achieved, work to eliminate monofilament line snag between the reel's spool flanges, and the backlashing trouble encountered with other long-running but heavier-weight spools. FWFT&T's own field tests of the product, plus stop-watch timing of the starts, running time and stops of the "Monoline's" reel spool tend to substantiate the advertised claims.

Sideplates are molded of very attractive blue Melmac plastic, fitted to a strong, heavily chrome-plated metal frame. The "Monoline's" operating mechanism features a star drag, free spool revolution when casting, self-lubricating bronze bearings and a torpedo handle with self-locking wrench.

The line spool is of strong, corrosion-resistant metal and beautifully balanced in the frame and sideplate bearings.

In the model #950, gear ratio is 3 to 1; plate diameter is 2¾ inches; arbor diameter 7/16"; pillar diameter 2-7/16", and weight is 15 ounces. Line capacity, taken from a lineometer reading, is 200 yards of No. 9 or 27 lb. test line, or 200 yards of 25 lb. test monofilament (.021 diameter) used with 50 yds. of No. 9 thread backing.

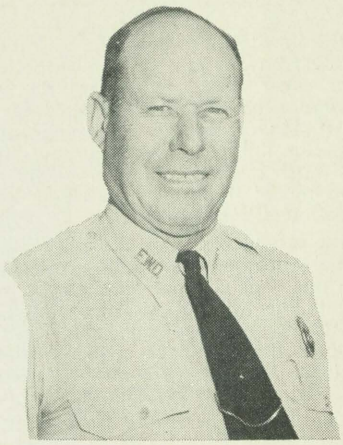
The #949 is similar to the #950 in all features but has a pillar length of only 1-25/32"; weight 13⅝ ounces and has a line capacity of 150 yards No. 9 or 27 lb. test line or 150 yards of 25 lb. test monofilament (.021 diameter) spooled over 25 yards of nine thread linen backing.

On both models, vinylite discs fit on each of the reel spool's flanges, between the flanges and the sideplates, and serve as line deflectors against possible line fouling. Anyone who has tried to remove a monofilament line snagged between reel spool and an end plate, without injury to the line, will appreciate this feature of the "Monoline."

The two models are very reasonably priced. Ocean City's list price for the model #950 is only $10.95, and a dollar less for the smaller #949 model "Monoline." Ask to see them where Ocean City products are stocked for retail sale.

MEET YOUR COMMISSION

"Meet Your Commission" is presented with the objective of introducing to FW readers the men who comprise the Florida Game and Fresh Water Fish Commission. Prepared by the regional information and education officers, this new feature will, each month, introduce one employee from each of the five regions of the state.



WALTER WHITEHEAD

South Florida

Since 1946, Walter Whitehead, Area Supervisor of the Commission's 18th enforcement district, has been employed in fish and game law enforcement work with the Game and Fresh Water Fish Commission.

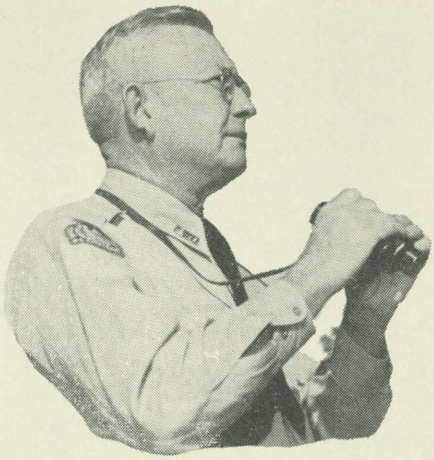
Mr. Whitehead is in charge of game law enforcement activities in the four counties: Lee, Charlotte, Sarasota, and Manatee, which comprise his area. Working under his supervision are eight Wildlife Officers assigned to this section of the state.

Walter's home is located in Ft. Myers. Mrs. Whitehead is the former Miss Theda Mae Walker. The couple have two children, Dorothy Jean, 25, and Walter, Jr., 17.

Mr. Whitehead came to the Commission as an experienced law enforcement officer. Prior to World War II he served two years with the Florida State Highway Patrol. For three years he served as an officer on the Ft. Myers police force after which he was employed as Assistant Chief of the Civilian Police Force at Buckingham Airbase near Ft. Myers. At one time Walter had charge of the 36 patrolmen on the base.

In addition to his law enforcement activities with the Game and Fresh Water Fish Commission, Walter takes an active interest in the public relations and education work conducted in his area. He helped to organize the Junior Conservation Club in Ft. Myers, one of the first in the state. He is also active in all other youth programs in his district. Walter frequently takes part in the activities of the various sportsmen's organizations in his four-county area.

Should you be in the Ft. Myers area and want to talk wildlife, get in touch with genial Walter Whitehead. He is always ready to be of service.



D. C. LAND

Central Florida

Area Supervisor DeWitt Clayton Land, at 59 years of age, has completed twenty consecutive years of service with the Game and Fresh Water Fish Commission.

Mr. Land graduated from Mayo High School and Special Normal School in Mayo. Upon graduation from Georgia-Alabama Business School in Macon, Georgia, "D. C." embarked upon a teaching career. However, his love for the outdoors and his interest in hunting and fishing drew him away from teaching into the field of wildlife conservation.

"D. C." and Mrs. Land, the former Elizabeth Lowe live in Ocala. They have six sons: Aubrey C. Land, age 32; Warren E., age 30; Yancy W., age 29; Rex E., age 27; Wayne C., age 23; and Phil S., age 14. Warren is a former employee of the Game Commission and Rex is presently so employed.

"D. C." has served in a supervisory capacity since the establishment of the area supervisor system several years ago. At the present time he is in charge of enforcement activities in Marion, Putnam, Flagler, Seminole, and Volusia Counties.

J. S. LANIER

Everglades

Area Supervisor Jimmie "Cap" Lanier has recently completed 14 years of service with the Game and Fresh Water Fish Commission. He is responsible for game law enforcement in an area of 3,602 square miles, including the counties of Palm Beach and Martin, plus the Lake Okeechobee section. To help patrol this area "Cap" has four Wildlife Officers assigned to work under his supervision.

Jimmie makes his home in Jupiter with his wife, the former Dolores Pierce, and three sons: Jimmie Stanley, Jr., age 12; Marvin LeRoy, age 10, and Howard Allen, age 2. "Cap" has lived all of his 37 years in Jupiter.

"Cap" Lanier is a capable speaker and is popular with both civic clubs and sportsmen's organizations which often call on him to make the interesting and informative talks for which he is known. He is a staunch supporter of the Junior Conservation Club movement in the state and has spent much time in furthering this worthy project.

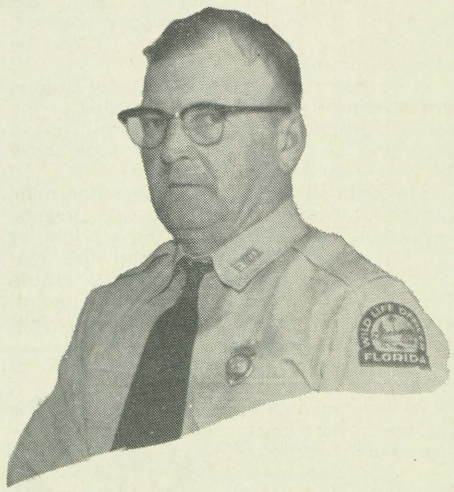
MAX L. AKINS

Northeast Florida

Area Supervisor Max L. Akins has been with the Game and Fresh Water Fish Commission since March, 1947. After serving for 2½ years as a Wildlife Officer, Mr. Akins was promoted to his present position which involves the supervision of enforcement activities in law enforcement area No. 6.

Max makes his home in Jacksonville with his wife, the former Eva Koehler and their two children, Max, Jr., age 13, and Daughter Janice, 8.

From May, 1952, until April, 1953, Max was Acting Chief Officer of the Northeast Division after which he resumed duties as Area Supervisor of his present district which includes the counties of Baker, Nassau, Columbia, and Duval.



BILL LEE

Northwest Florida

Bill W. Lee is in charge of game law enforcement activities in Northwest Florida's Area No. 1. Mr. Lee has been with the Game and Fresh Water Fish Commission since he was employed as a Wildlife Officer in February, 1945.

Bill's home is located near the Perdido River in the northwestern corner of the state.

His wife is the former Mattie Reed. In addition to Mrs. Lee, Bill's family includes a daughter, Margarite, age 16, and three sons, Charlie Mac 24, Cecil 20, and Billy Ray 11.

Prior to his employment with the Commission, Bill served for four years as a Deputy Sheriff. From 1945 until 1948 he was employed as a Wildlife Officer and was then advanced to the position which he now holds, that of Area Supervisor.

Bill's "beat" includes the four westernmost counties of Florida. With the assistance of the eight Wildlife Officers under his supervision, Bill is responsible for the enforcement of the fish and game regulations in that section of the state which includes the vast Eglin Air Force Proving Ground. Bill also supervises the officers assigned to the annual Eglin Field hunt. END

THE FLAMINGO

(Continued from Page 5)

up the feeding habits of the older birds, probing about in the mud, or "treading" in the shallows to force food items to float where they are easier to obtain. Snails of the genus *Ceritheum* comprise the staple item of flamingo diet.

With the exception of man, flamingos have few enemies for within their present range there are very few predacious birds or animals that will attempt to attack the adults. The wariness of the birds enables them to escape many of the human hunters who would take them. Turkey vultures are sometimes serious predators of eggs and young. Flooding of rookeries by heavy rains occasion high mortality at times. END

THE REASON IS CRYSTAL CLEAR

(Continued from Page 33)

guide and he has several very competent assistants. The guide boats at this resort are unique in that they are approximately twenty-one feet long and six feet wide with high sides. They can comfortably accommodate four people for fishing, in addition to the guide. All boats are equipped with 25 h.p. motors and carry a 3 or 5 h.p. auxiliary motor. The larger motors enable the anglers to get where they want to go in a hurry, and the smaller ones are used to maneuver over the shallow water quietly enough so that the fisherman can cast or spin fish.

The next day, we made arrangements for one of these larger boats and a guide to take us to the mouth of the river. Our guide was a young lad named Raymond O'Brien. Ray has been guiding sportsman on the Crystal for more than twelve years, he told us. He knew where the fishing was good.

Upon leaving the camp we noticed a considerable commotion over in King's Bay. As we came closer, we saw a thrashing manatee, or as it is more commonly known, a "sea cow." As we sailed closer, we saw not only one but four fine specimens of this rare mammal playfully churning up the bay. They ranged in size from 12 to 15 feet and we hoped that perhaps this was an omen of good luck.

Upon reaching the flats at the mouth of the river, we immediately began to get action. We started reeling in speckled trout weighing between 2 and 3½ pounds.

A method of bait fishing that produces, at least in this section of the state, was revealed to us. First, catch a pin fish or sailor's choice and cut the tail off. I like to use light leaders on my spinning rig and just let this tail float along naturally quite a ways in back of the boat. If you use a casting rod, rig up a bobber, sinker, and hook combination, and keep popping the tail as you would a live shrimp or any other such bait. This usually brings the desired results.

Bobbie, being the lucky angler that day, was the first to boat some specs and I began to think that maybe this was just not my day. Suddenly, I hooked something that jarred my arm all the way to my shoulder. My spinning reel started to sing its own song, as some powerful dweller of the deep kept me going around and around in circles. When I finally managed to tire him out, I led the the fish close to the boat. We were surprised to find that I had hooked and conquered a four foot shark on 6 pound test spinning line. I don't know which one was more tired, me or the shark.

Bobbie then hooked a lady-fish and this time we were entertained by the neatest display of gymnastics for this is one gamester that can leap, fly, and swim and never seems to give up.

When we came in that evening we had a fine string of trout. All concerned considered the day perfect. Light tackle and river mouth speedsters certainly make an exciting combination.

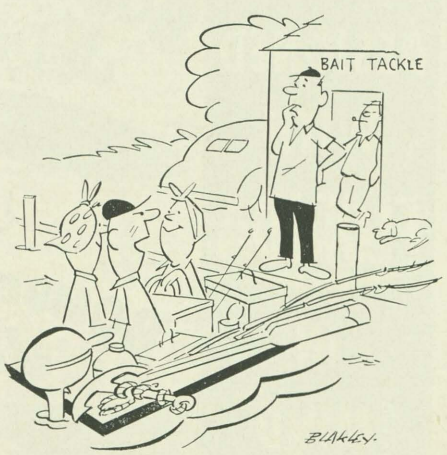
If you are strictly a still fisherman, you will find the wary sheepshead lying in wait around the rocky bottom of the river mouth. Another fish which should not be overlooked and one which is caught in the same vicinity as the sheepshead, is the redfish or channel bass. The best method for enticing these gamey fellows is a stout casting rig, a good strong leader, and a fast moving spoon. The redfish strikes best during high tide, and the higher the better the action. When the water is high, the redfish come in around the shores and among the rocks for some ways up the river. These fish range from 3 to 4 pounds to 12 and 13 pounds and are one of the gamest fish found in the river.

Trout fishing is usually best toward the middle of the summer. At this time a catch of a hundred or more is not too unusual. As the waters get cooler toward the winter season, trout move closer to the mouth of the river and can sometimes be caught quite a ways up stream. As the weather gets warmer they move back out to the grassy flats.

The beauty of fishing in this river is the fact that when you get a strike, you never know for sure what type of fish you are doing battle with. There are hundreds of silver and gray mullet, and their leaping antics are always a source of wonder to the fisherman and other outdoor enthusiasts. The banks of the river are inhabited by all types of wading birds and waterfowl. We saw several distinct species of egrets and cranes.

In season, Crystal River can boast of one of the finest oyster fisheries on the west coast and folks come from far and near for a bushel or so of this fine sea food.

In the fall, the duck hunting is excellent on the flats and around the islands at the mouth of the river. Deer, bear, quail, and wild turkey abound in the hammock land in the interior. We can safely say that this is still one of Florida's many wildlife frontiers. END.



"If you think of anything we've forgotten, forget it."

ST. JOHNS RIVER MARSH

(Continued from Page 26)

of Engineers for the upper St. Johns River area is now being planned in detail. As yet, those studies have not reached the point where it is known whether the problems of the area can best be solved by: (1) diversion of flood flows to Indian River with some reservoir storage in the larger lakes of the valley and their adjacent marsh area; (2) greater volumes of flood storage in the marsh area with no diversion of flood flows; (3) improvement and enlargement of the channel of St. Johns River; or (4) a combination of two or more of the above methods. In this connection, levees along the marsh reservoir areas would have to be considered in conjunction with several of the above methods of flood control. In any event, it appears that sizable areas of the marsh are likely to be needed for the flood control project. These lands would be purchased by the Flood Control District and removed from private to public ownership.

The plan of the Corps of Engineers, whichever plan it may be, will give every possible consideration to preservation of fish and wildlife values to the maximum extent consistent with the basic purposes of the project. They are already working closely in cooperation with State and Federal conservation agencies and using the advice of those agencies to preserve and enhance the conservation aspects of the project. Both the U. S. Fish and Wildlife Service and the Florida Game and Fresh Water Fish Commission have field offices functioning to act as consultants to the Corps of Engineers in preserving these values.

Army Engineers are well aware of the inherent disadvantages of diversion of floodwaters to Indian River. The citrus and salt water fishing along those waters are prime considerations. If diversion is the final plan, then provision will probably have to be made to get the diverted water from St. Johns River to the ocean without mixing with the waters of Indian River. Dikes across Indian River, and outlets through the barrier islands may be the answer.

The fresh water fishing area in St. Johns marsh is also an important consideration which engineers are carefully coordinating with wildlife officials. They assure the sportsmen and conservationists of Florida that their interests are being thoroughly considered. When the final plan is developed by the engineers, it will again be referred to wildlife interests to be sure that it meets their needs to the greatest possible degree. It is rather futile to argue the merits or objection to any particular plan of flood control until a detailed plan is developed. At that time, there will be a firm basis for constructive debate.

The logical course of action would appear to be for flood control engineers and conservation interests to work together to preserve the marsh and its wildlife values to the greatest possible extent. The alternative appears to be practically complete private use of the marsh area for cattle, groves and crops. The choice seems to be between as much of the loaf as possible, or no loaf at all.

END.

DIKE ENCROACHMENT IN ST. JOHNS RIVER MARSH

Area	*Total Area in flood plain*	*Percent of flood plain inclosed by dikes* 1945	1954
South of Melbourne	765 sq. mi.	36%	64%
North of Melbourne	332 sq. mi.	2%	9%
Entire Area	1,097 sq. mi.	26%	48%

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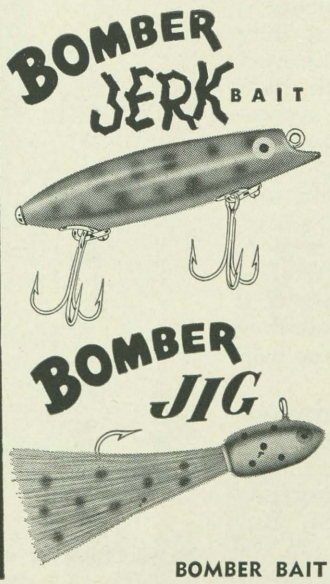

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IT'S ALL OUR FAULT

(Continued from Page 27)

actively interested. Questions were asked. Some were answered—a lot were not. Increased interest on the part of these groups forced the issue into the open.

The 1947 plan was declared as strictly tentative—that whatever was proposed then, would be superseded by the new survey now in progress and scheduled for completion by the end of 1955.

Whatever the new plan holds, the people as a whole remember the three big drainage ditches shown on the 1947 map.

"Flood control?" they ask, "Nothing but a camouflaged drainage project."

Right or wrong, the "drainage" stigma sticks.

Whatever has gone on in the past, it is going to take a lot of money to repair the damages that could have been prevented had we preserved our wetlands originally.

Since we have not, and these lands *are* in private ownership, what can be done?

We *CAN* buy these lands back. Expensive as they may be, their preservation for fish and wildlife is vital. We can stump for an increase of the Duck Stamp fee, and legislation for a larger slice of these funds for purchase of needed wetland properties. Use of more Pittman-Robertson funds for land purchases. Appeal for public subscription to purchase and return forever these lands originally in public ownership.

We can ask the Congress to put a halt to subsidizing this wasteful practice of drainage. A revision of Public Law 732 to insure that our fish and wildlife resources are fully protected under any drainage program.

We can work with the owners of these wetlands, asking their cooperation in restoration of the marshes and wetlands.

We can form ourselves into a strong, coordinated group, to demand that the preservation of our natural resources be uppermost in the minds of our administrators at all times.

We can insist that the State of Florida take more than a sideline interest in the way its natural resources are managed, whether in public or private ownership, that the public interest in our natural resources is protected, and that the people of this state are assured that this vital base is wisely managed.

For when we lose this resource base—we have lost it forever.

END.

CHAMP WITH A CRIPPLED MINNOW

By Leo Schumaker

IF FISHERMEN kept statistics like those in organized baseball, W. B. (Dick) Makinson, Kissimmee sportsman, would be leading the league—perhaps even setting a piscatorial record of sorts.

Recently Makinson ran into such a run of luck that he kept a record of his outings and results—and the result is an eye opener.

Between February 28 and May 15 Makinson went fishing 22 times.

He averaged catching six fish per 22 tries. He averaged catching a bass that weighed in at five pounds. The fish's total weight averaged seven pounds. The top fish caught, shown by Makinson in photo, weighed 11¼ pounds.

Makinson was accompanied on the trips by ten different persons—and they collectively averaged one large fish each outing, with the ten top bass toeing the tackle at an average of 6½ pounds.

Makinson's catches were all made on a topwater crippled minnow. Each outing averaged a half-day, with alternate rowing. He fished seven different lakes, including Conlin, Cypress, Kissimmee, Russell, Tohopakeliga and the Kissimmee River.

Makinson, who was born and raised in Kissimmee, and who founded and organized the famous Kissimmee-Okeechobee Boat-a-Cade six years ago, says the bass fishing today is the best it has ever been. END

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THE PURPLE MARTIN

(Continued from Page 7)

that the vines become affected with powdery mildew, keep them dusted with dusting sulphur. Gourds are not easily grown in the area where they were formerly grown, and are disappearing. They seem to be affected by diseases similar to those that are complicating watermelon culture.

In some sections, the martin still clings to its primitive habit of nesting in hollow trees. These sites are usually in clearings or burned over areas where stands some tall dead tree with numerous woodpecker holes which will accommodate several pairs of birds. Your writer has seen several such natural nesting colonies of purple martins throughout South Florida from the Kissimmee Prairie to the lower Big Cypress Swamp.

Martins feed only from the wing and their food consists of various insects. They have been erroneously accused of destroying honey bees, though the only bees taken are drones, and these are few. In an official examination of over 200 stomachs, bees were found in only five, and all were drones. This account is given in Florida Bird Life, by Alexander Sprunt, Jr. When kept near cattle, martins have been found very beneficial in helping rid the animals of the various species of troublesome horseflies. Throughout the southeastern states, some tobacco farmers have told me that they find that colonies of martins kept near their fields have proved effective in destroying the moth that lays the eggs causing tobacco hornworms. Also cotton boll weevils have been found in the stomachs of many martins examined. It was claimed by early rural white settlers that the keeping of martin colonies about their farms was chiefly to aid in warding off hawks from barnyard poultry. It is said that a colony of martins will band together and drive off with a vengeance any hawk or large suspicious looking bird that chances to come near their nesting sites.

DESCRIPTION: The purple martin is the largest American swallow, measuring from 7¼ to 8 inches in length, with a wingspread of from 15½ to 16½ inches. The tail measures 3 to 3½ inches and is moderately forked. The adult male is the only singularly colored American swallow, being sooty black throughout with somewhat of a slate-blue sheen about the most exposed parts of the back, breast and neck. Some young males observed in their first year of breeding will be the same color as the female. The adult female is duller in upper parts than the male, varied with drab; the throat and breast are dark hair-brown in color, mottled with white, shading to dull white on the belly.

Range: Purple martins breed from central Alberta, southern Saskatchewan, southern Manitoba, central Ontario, New Brunswick, and Nova Scotia, west to Montana and Idaho, and south to the Gulf coast, Veracruz, Jalisco, and Homestead, Florida. They winter in Brazil, but do not eat coffee there, as is told among some southern gentlemen.

In Florida, martins are one of the earliest of the spring migrants, and the dates of arrival vary several days from year to year. The time of arrival is usually early February and nesting begins as early as late March and continues throughout June, with May 15 about the last date of nest beginning. In the southerly latitude they begin to leave their nests in early June, while farther northward in their breeding range, the arrival and nesting dates are proportionately later. In Canada, for example, martins arrive in June and begin nest building almost at once, and leave in August. These northern birds are supposedly not the same individuals that nested farther south earlier in the season.

In desperation for available nesting sites, martin pairs now commonly succeed each other for the same compartment until there are up to three separate consecutive families reared in each compartment in one breeding season. Now if this valuable species is to exist in the numbers that its value to man warrants, it is up to man to provide it a home in which it may perpetuate its kind. In the rural South where most farms were once characterized by a tall pole strung with a dozen or more gourds, almost none are now found, and bird houses have not been put up to replace them. The martin population has diminished to a fraction of one percent of what it was in 1938.

In order to encourage Florida Wildlife readers to erect gourd nesting sites for the martin, Mr. Hardy, the author of this article, offers to send a packet of gourd seeds to anyone sending a stamped, self-addressed envelope to him with their request for the seeds. Address is Mr. L. M. Hardy, South Bay, Florida. END.

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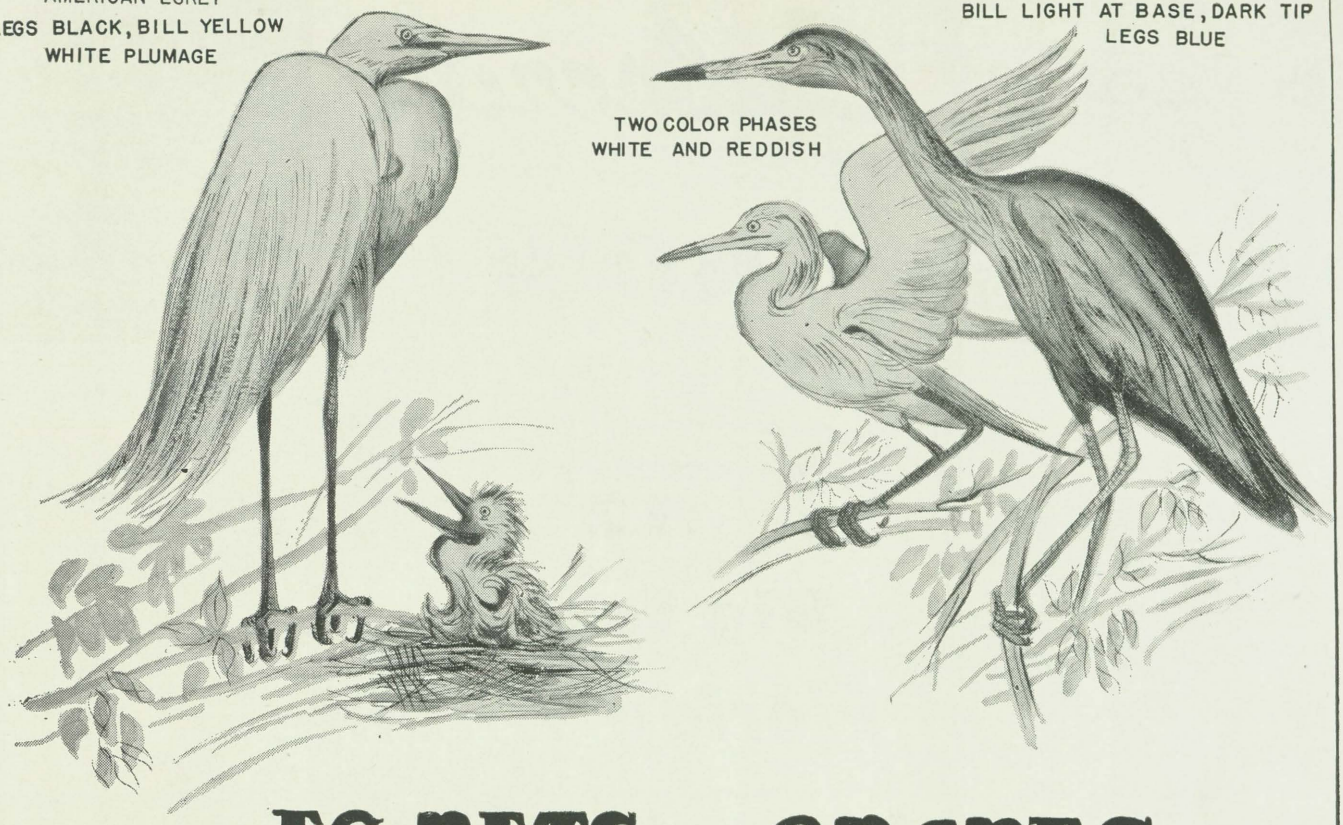

EGRETS AND CRANES

FLORIDA (SANDHILL) CRANE

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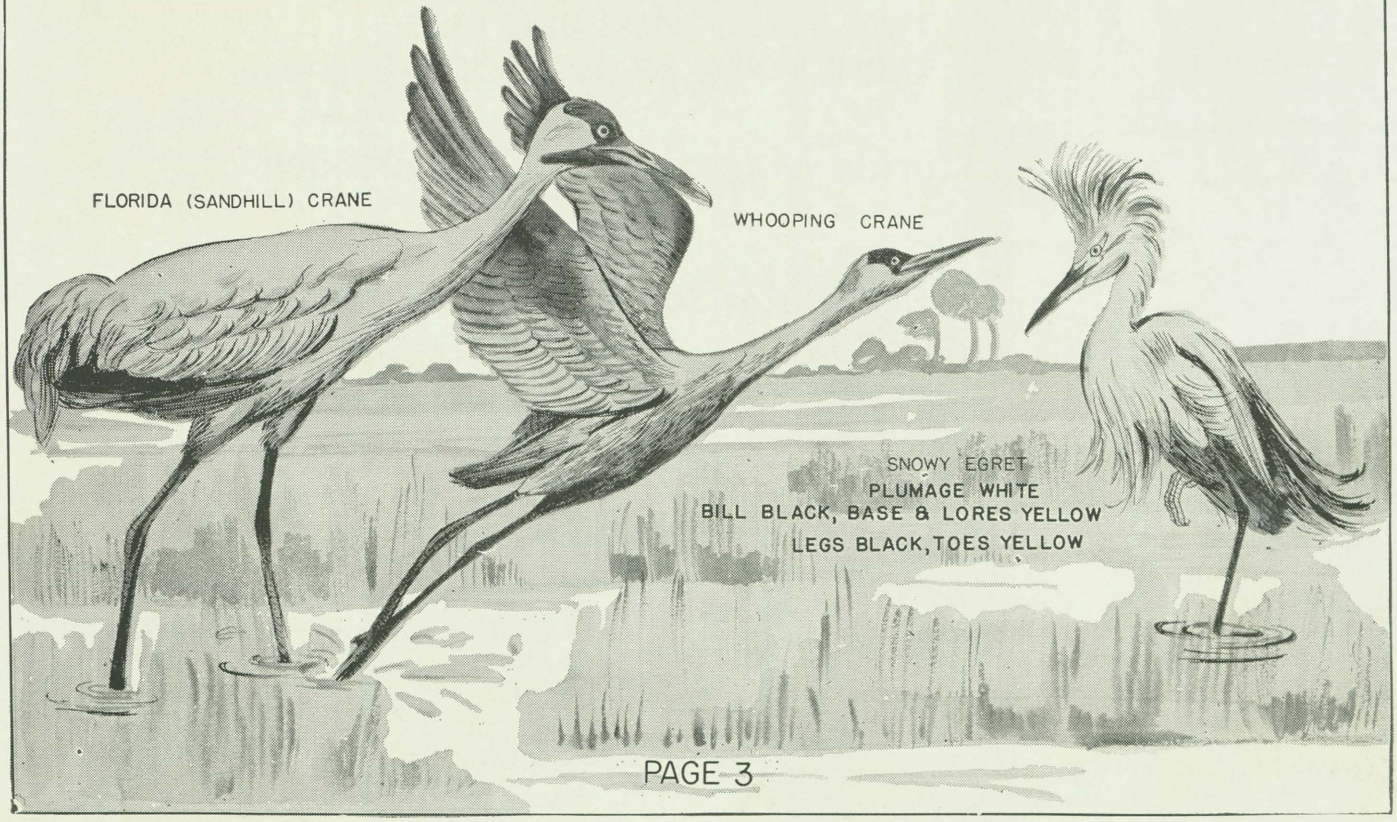

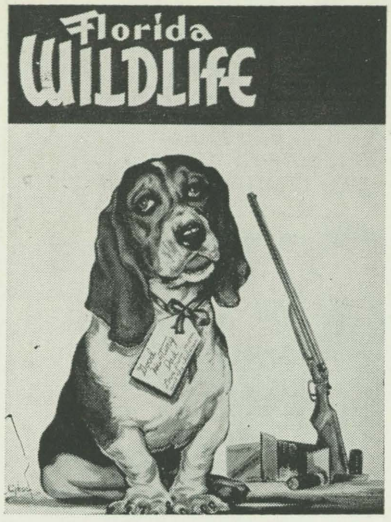

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